THE EDUCATION SYSTEM

C-LAB

Notator
ALPHA

MIDI NOTATION PROGRAM

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Foreword

The introduction, a few years ago, of the Music Instrument Digital Interface (MIDI) which allows music-related instruments, computers etc to speak to each other, has led to a steady proliferation of more and more powerful programs and instruments. Getting the best out of these products needs a certain amount of technical know-how, though a well-designed and "user-friendly" product should strive to be as "non-technical" as possible to allow your creativity to flow.

NOTATOR ALPHA is designed to be your easy path to using technology with music. To help you, we have included only those functions that you really need in order to learn and work.

A lot of thought was put into the program's ability to allow the user to edit the notation, with automatic, simultaneous alteration of the corresponding MIDI events. Because you are using several senses — hearing, sight, touch — *comprehension* is made that much easier. ALPHA benefits from all the experience gained from the bigger and more powerful NOTATOR program.

NOTATOR ALPHA does not lead to a dead-end: if you get to the stage where you out-grow ALPHA because of your increased experience, simply move up to the NOTATOR system, without having to change your way of working: there is an affordable upgrade path.

Many thanks to all the musicians, composers, teachers and everyone else involved in the NOTATOR ALPHA project.

Gerhard Lengeling
Chris Adam

Oktober 1990

How to update your NOTATOR ALPHA manual

Please follow these directions when updating your manual with Version 1.1. You should have received 27 leaves (excluding this one) with the update, each of them marked with a little "1.1" at the bottom to show they belong to the new update.

Discard the following old pages:	Insert the following new pages:
–	*About Version 1.1:* 1/2
Contents: 5/6 – 11/12	*Contents:* 5/6 – 11/12
Chap. 6: 5/6	*Chap. 6:* 5/6
Chap. 9: 9/10 – 13/14	*Chap. 9:* 9/10 – 13/14
Chap. 10: 11/12	*Chap. 10:* 11/12
Chap. 11: 11/12 – 15/16	*Chap. 11:* 11/12 – 15/16
Chap. 13: 1/2, 3/4	*Chap. 13:* 1/2, 3/4
Chap. 14: 5/6 – 9/10	*Chap. 14:* 5/6 – 11/12
Chap. 16: 7/8	*Chap. 16:* 7/8
Appendix: 9/10, 11 /12	*Appendix:* 9/10, 11/12
Index: 1/2 – 9/10	*Index:* 1/2 – 9/10

At the end of this operation, you should have removed 25 leaves from your manual. Check that none of them is marked with the little "1.1" at the bottom: this would mean you were discarding one of the new pages!

C-LAB
SOFTWARE

About NOTATOR ALPHA – Version 1.1

Dear User,

Thank you for your continuing interest in the development of NOTATOR ALPHA. We trust that Version 1.1's new features will prove musically useful.

Here is a roundup of what is new:

– Up to *eight* double staves are now allowed in Full Score mode

– Syncopation display

– Page Preview

– Additional fonts for display and printing

– "Insert mode" in the event editor

– "Demix All Voices"

– High resolution 300 DPI printout with compatible printers

– More key commands

Furthermore, this Version update comes with a Tutorial disk containing over 50 exercises covering various parts of the program.

The C-LAB NOTATOR ALPHA disk contains an additional program which changes the program's text from English into your local language.

Double-click "LANGUAGE.PRG" to start the language-installation program.

You are then able to select the desired language. After the installation, the Atari desktop appears again, from which NOTATOR ALPHA can be started as usual. You may change the language as often as you like.

"Network Sync": this is the name of a new C-LAB development which will especially benefit schools and music colleges. It allows several NOTATOR ALPHA programs to be remote-controlled (eg. Start, Stop and various positioning) by one NOTATOR (Version 3.1 or later). Please contact your country's distributor for more details.

Your C-LAB team

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Notator ALPHA

NOTATOR ALPHA is a program that records, plays back and displays musical ideas. The user can enter music directly from the computer, or by playing any instrument equipped with a MIDI interface.

Incoming MIDI data can be immediately displayed as notes on a stave: there is no division between MIDI notes and their graphical representation on screen.

Alterations to the on-screen notation have a simultaneous effect on the corresponding MIDI events, and *vice versa*.

Thanks to this two-way effect, NOTATOR ALPHA is a complete MIDI composition and production system that helps the musician from the time he or she enters the first musical ideas to the final printing of the score.

1. The concept of NOTATOR ALPHA

1.1 How to use this manual

Welcome aboard! Important information is in bold type.

The remainder of the information in normal type contains operating steps relating to the topic in hand and descriptions of its other features.

An additional aid is the chart of keystroke commands in the Appendix, giving an overview of all the things you can do using the computer keyboard.

This manual can be logically read from beginning to end.

If this is the first time you are working with the Atari ST computer, continue reading this chapter. If you are already familiar with the computer, you can skim through the rest of the Chapter and carry on reading Chapter 2: "FIRST STEPS".

2. For computer novices

If you are a computer novice ...

... don't panic! You do not need any specialized knowledge of computing, nor of computer-programming languages! You bought this program to allow you to use computer technology without having to learn all the difficult bits; it will transform your computer into a musical sequencer.

A few basic observations on computers: with the right program, they should reduce your workload, save you time and so allow you to concentrate on the important things. Used in the right place at the right time, and in the right way, that is what they do. Yet because the range of capabilities of a computer system is so vast, it pays to think carefully about the use to which the system is to be put. Read on for more help.

English-speakers are particularly fortunate that the "language of technology" is English — little or no explanation is needed for the various terms used.

**2.1 Hardware
(what you can
see and touch)**

**2.1.1 Computer
and mouse**

The computer consists of, amongst other things, a "central processor" that does all the high-speed calculations that the program demands of it, and a "Random Access Memory" or "RAM" that holds all the data in a "volatile" state, that is, until the power is switched off. Novices: do not confuse what this "RAM" does, and what a "disk" does (see below). The RAM is the computer's own memory, which lasts only until you switch off. Disks are for permanently storing the contents of the RAM.

Never disconnect the earth wire from any computer equipment.

The Atari ST range includes various models and revisions, all of which are compatible with C-LAB software except for the 520ST whose RAM is too small. (But the memory size of the later 520 ST E, like all the ST E models is easily upgradeable using official Atari chips — see your local dealer.) The ST range allows a maximum RAM of 4 Megabytes, with the most popular model being the 1040ST or 1040STE with its 1 Mb RAM.

Every Atari has communications sockets or "ports" such as the MIDI ports that allow messages to flow to/from other devices.

The Atari 1040ST and STE have a built-in keyboard and disk drive, requiring only a mouse and a monitor to be connected at their own ports. The MEGA 2ST and 4ST models have a separate keyboard which connects to the central processing unit or "CPU". The various portable STACY models have a built-in monitor and a "tracker-ball" that can replace the mouse, though a mouse can be added.

The mouse is the small plastic box attached to the computer by a cable — its "tail". As it slides across the desk, a pointer moves across the screen and, when the pointer is in the desired position, a button on the mouse is clicked to send an instruction. It is extremely easy to learn to use, even by the greatest computer-phobe!

Any ST-compatible mouse is fine, though most people use the official Atari one. Always use it with a mouse mat (such as C-LAB's!) to keep it clean and running smoothly. Some people use a stand-alone tracker ball which saves on desk space but takes a little getting used to.

Get into the habit of switching the computer on last, after the other devices in your system, and off before them.

You lose the data in the RAM when you switch off or if the power is interrupted in any way. Save the data regularly onto "floppy" disks or onto a "hard disk".

The disk drive, such as that in the ST computers, transfers the contents of the RAM which the user has created onto floppy disks for permanent storage, or reads the data on a disk (such as NOTATOR AL-PHA's) which programs the computer; it works rather like a tape recorder combined with a record player, in that it encodes or reads the rapidly-spinning magnetic floppy disk via a read/write head. It does not necessarily encode the disk in a logical manner, but rather adopts a random method of reading and writing that uses space (organized in blocks, sectors and tracks if you must know!) efficiently. Always wait until the disk drive light goes out before removing a disk.

2.1.2 Floppy disk drive (internal)

The majority of users use the computers' built-in floppy disk drives. The alternative is to add a hard disk drive to your computer system which can make work that much more pleasant as it is much quicker than a floppy disk drive.

A hard disk drive works, in principle, the same way as a floppy disk drive, but there are important differences. The disk itself is built into the drive and cannot be removed (though there are "cartridge" drives that offer all the advantages of hard disks but with removeable 45 Mb cartridges, at a price). Reading and writing times are much less than the usual floppy drive, and considerably more can be stored on them — up to 30 or 60-plus times more.

2.1.3 Hard disk drive (optional)

2.1.4 Monitor

The official Atari high-resolution monochrome monitor is used by virtually everyone, being relatively easy on the eye over long periods. Never disconnect it from the computer or you will lose all your data. You can, however, turn it off without affecting the computer.

NOTATOR ALPHA is colour-compatible, which means that it will run on a colour monitor, though it is not intended to be seen in colour. A colour monitor can be run in medium or low resolution modes only (there is no such thing as high resolution colour on the ST), and you must "install" your resolution first on the ST's "desktop" in "Set Preferences" under the "Options" menu.

However, use of a colour monitor (or a television if your ST model has a "modulator") can in no way be recommended since the picture is somewhat distorted and does no justice to the fine graphics of either program, plus the screen "flimmer" is unpleasant after a while.

A floppy disk allows you to carry any data about, both program (eg NOTATOR ALPHA) or library data such as your songs (try not to store your music data on the NOTATOR ALPHA program disks — keep them separate). You should always have between five and ten good quality "branded" disks (Double-Sided, Double-Density 3.5") available for use, **which will first have to be formatted to prepare them to accept data** *(see Chapter 20: "DISK OPERA-TIONS")*. Do not buy "HD High Density" disks which are not recommended for the Atari and anyway cost a lot.

Disks should be handled carefully: they should never be bent and should be kept away from dirt, dust, liquids and magnetic fields such as loudspeakers or mains cables ... but musicians are allowed to handle them! Never remove a disk from the disk drive while the drive light is still on.

Songs etc are stored on disk in the form of "Files", which are packets of information with a name which you give them at the time of saving, allowing you to retrieve the files and load them back into the program. During the course of your working, you should get into the habit of regularly saving to disk what you are doing in case a power failure or other interruption to your power supply should erase the data in your RAM — at least you will have a very recent version on disk.

From time to time, make back-up copies onto other disks in case one of the disks has a fault. This may sound over-cautious, but "better safe than sorry" with important data.

By the way, the reason why these disks are called "floppy" is that the disk itself, contained inside the outer casing which you can see and hold, is a thin floppy circular disk.

2.2 Software (the instructions that drive the hardware)

2.2.1 Atari ST operating system (TOS)

The Atari operating system (called "TOS" — **T**he **O**perating **S**ystem) is the "foundation" program, built into the Atari ST, which allows programs such as NOTATOR ALPHA to work within the Atari. Without it, the computer would show nothing on the screen and would not allow anything else to run.
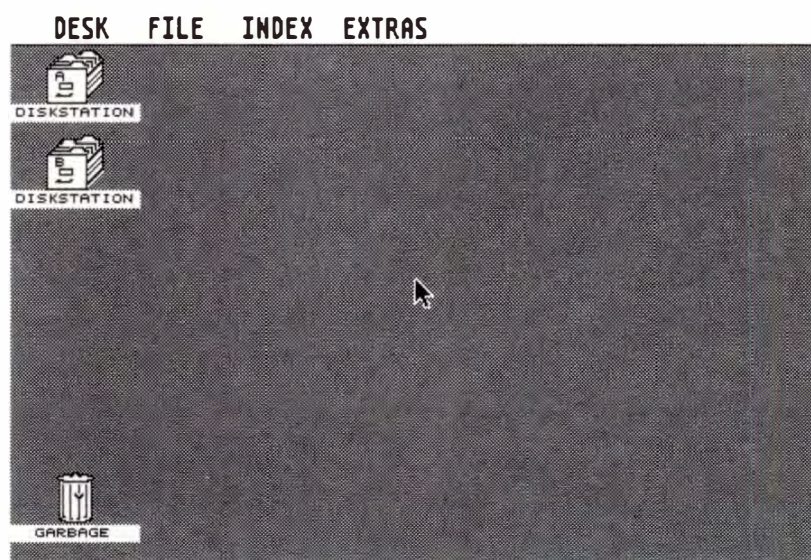
The "**Graphic Environment Manager**" or "**GEM**" forms part of TOS and controls the "user interface", meaning the "desktop" (what you see when you first switch on — symbols of various kinds arranged around the screen), the mouse pointer, the windows that appear at various times, and various other related items.

The Atari operating manual is the place to find more information on the computer.

2.2.2 Programs

A program is the creative work of one or more programmers; it consists of a long chain of instructions that gives the computer's processor certain abilities and functions, turning it into, say, a word processor, a database, or a MIDI sequencer. A program is part of the world of "software", the intangible instructions you cannot touch, as opposed to hardware (disks, computers etc) which you can.

NOTATOR ALPHA remains the intellectual property of the programmers, which is why the program is protected by a "dongle", the hardware key which slots into the Atari's side *(see Chapter 2: "FIRST STEPS")*.

2.2.3 Sequencer

Ten years ago, a sequencer was an expensive piece of hardware that gave you a few sequenced monophonic notes. It in no way compares with what you get now. Put at its most basic, a sequencer's operation is not dissimilar to that of a tape recorder, except that a tape recorder records the acoustic sound which results from someone's performance, whereas NOTATOR ALPHA records the performance information itself as MIDI data, but not the sound: the sound remains within the synthesizer. It is the performance that concerns us — when the note was struck, when it was released, how hard it was struck and so on. The resulting MIDI performance data can then control any MIDI device for limitless possibilities in terms of editing, manipulating, correcting ... the list goes on and on.

And because the sound is always newly-generated live within the synthesizer, by the MIDI performance data, it is always "first generation" with no loss of quality. Not for nothing do we talk about NOTATOR ALPHA as forming the heart of a "virtual studio".

1. Starting the program

1.1 Before switching on

Before switching the computer on, insert the special little cartridge that came with your program, label face-up, into the "ROM port" on the left side of the computer. This is the all-important "key", known as a "dongle" in computer-speak. It contains no program information, but ensures that only an "official" NOTATOR ALPHA can be run with the dongle in place. This system means the program disk cannot be copied and used without the dongle being present, and so protects C-LAB from the theft of "intellectual property"; this means that C-LAB retains the incentive to develop further software for many years to come for you, the musician. Take every care not to lose the dongle; lose the dongle, and you have lost the program. Its value goes far beyond what it cost to make. We can replace the program disk or exchange a defective dongle without any problem, but you would have to buy a complete new NOTATOR ALPHA package if you lost your dongle.

The dongle must be very well inserted. Before switching on each time, double check that it is firmly in place.

Never insert or remove the dongle while the computer is on!

1.2 MIDI connections

At its most basic, a simple system starts with the master keyboard's MIDI Out connected by a MIDI cable to the Atari's MIDI In, and the Atari's MIDI Out connected to the keyboard's MIDI In.
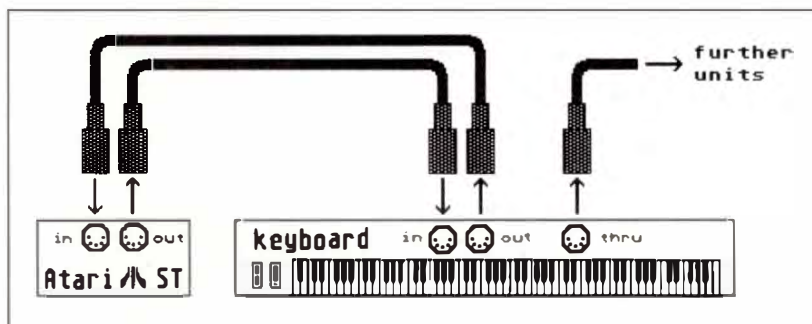
Use good quality cables and, even more important, good quality DIN plugs. The best ones are purpose-made for MIDI as they have just three pins (the end pins of a 5-pin DIN plug are not used in MIDI).

Warning! The Atari's ST MIDI Out port is non-standard. This means that what you have to avoid at all costs is a plug whose end pins (called "1" and "3") are soldered across to the neighbouring pins (called "4" and "5"): using this type of lead on the Atari's MIDI Out often leads to weird problems such as sticking notes, drones etc, especially in multitimbral synthesizers. If the plugs are moulded on, preventing access for checking, use a meter to check them or do not use them on the Atari's MIDI Out.

Insert your program disk into the Atari's drive, then switch on. You should shortly see two "floppy disk" symbols appear on the screen. Double-click symbol "A". A window will open, displaying the contents of the program disk.

(On first buying NOTATOR ALPHA, you should "size the window" — see the Atari manual — to a size large enough to display all the program files, and use the Atari's "Save Desktop" option — see the Atari manual — to save the window onto your program disk: this speeds up the loading process. The Atari manual contains all you need to know about the computer such as file management, copying, formatting etc. The various files you see on the program disk all do various things within the program and should not be interfered with.)

Now find, then double-click, the program file called "ALPHA.PRG": this loads the program instructions into the computer's RAM from the disk. Once the program is loaded and the disk drive light is extinguished, remove the program disk and place it somewhere safe — it has done its job for now.

You do not need to know all there is to know about NOTATOR ALPHA at this stage. You will gradually get to know what you need; some functions will appear to be vital to the way you work, whereas some can be left for later.

The vital functions concern recording, playing and saving/loading your work to/from disk.

If you want to start working with NOTATOR AL-PHA without intensively studying the whole manual in one go, carry on.

If you would like some more information about how to handle the mouse, the computer keyboard and the "menu", see *Chapter 3: "GENERAL HANDLING"*.

First Steps

3. The first recording

— You did remember to properly insert the dongle, didn't you!
— Adjust your keyboard to receive on MIDI Channel 1 (and 2, 3, 4 etc if multitimbral). Assign any other devices to the remaining Channels.
— Use the mouse to click "RECORD" on the right of the screen. The 4-beat count-in will start the recording process (turn the monitor's volume control up), the screen reverses shading (white on black) in order to show that recording is taking place.
— Play something — anything — on your MIDI instrument, keeping in time with the metronomic click.

Tip: place your master keyboard into its "MIDI Local OFF" mode to avoid doubled notes.

— Now click the "STOP" icon on the screen. The sequencer stops, the recording is finished and the name "**OK**" should appear on one of the tracks.
  If this is not the case, you should check the MIDI connection from the instrument's Out to the computer's In. To show that something is reaching the computer, the display marked "FREE" at the top left of the screen should count down while you are playing the instrument.
— Now click "START". The sequencer will start from the beginning and you should now be able to hear what you have just played. If this is not the case, you should check the MIDI connection from the computer's Out to the instrument's In, and check that the "CHANNEL" value in the track is set to the same MIDI Channel as that of the receiving instrument.

STATUS	Pattern: 1	CHANNEL
1 ** OK **		1
2		1

If you have completed these first steps successfully, you can select any one of the other 15 tracks in the current pattern. by mouse clicking the track number, pressing the up/down cursor arrows on the ST keyboard or using the ST "calculator keypad" keys '1' to '9' and 'LeftShift 0' to 'LeftShift 6'. When you have repeated the above steps, the track you recorded first will be heard at the same time.

If you repeat the above steps on other tracks, you will hear the other tracks play while you record and play your current track: this is "multitrack" recording using MIDI.

— "Record": to record in a track again, simply select the track by clicking its number, then clicking the Record icon or pressing '*'.

Once you have recorded a few tracks, "START" the sequencer and do a few mouse experiments while it is playing:

— Change the "TEMPO" value (above the pattern window in the middle of the "information bar"); click on the main bar counter at the righthand end of the information bar and see how you can move around the music; set various "QUANTIZE", "TRANSPOSE", "VELOCITY" values in the tracks *(see Chapter 6: "TRACKS")*.

— Assuming that your MIDI system supports more than one MIDI Channel, set different "CHANNEL" values in the tracks (eg a track addressing Channel "2" will be received by the instrument set to receive Channel 2 data from the Atari's MIDI Out port).

Before you switch off the computer, the contents of the computer's RAM (not the whole contents, just the part of the RAM that contains your amazing musical efforts) must be saved to disk if you wish to have them available for further work at a later date *(see Chapter 20: "DISK OPERATIONS")*.

— Take a new, empty disk and place it in the disk drive.

— Go to the "File" menu and select "Format Disk". Before clicking "DOUBLE" to start the formatting, do a final check that the disk is not one of your valuable library disks!

Once formatted, the display will tell you how much space you have on the disk (should be 726 Kilobytes). Click "OK".

```
 _____          _____
| .. .. .. .. .. .. .. .. .. |       | ___  FORMATTING WILL DELETE    |
| Delete File                |       |(STOP) EVERYTHING ON DISK A!    |
| Format Disk           \    |       |                                |
| .. .. .. .. .. .. .. .. .. |       |    [CANCEL]    [  OK  ]        |
|_____|       |_____|
```

```
      _____
     | /!\  FORMAT DISK IN DRIVE A            |
     |      Use 'DOUBLE' if possible          |
     |                                         |
     |  [CANCEL]  [SINGLE]  [DOUBLE]          |
     |_____|
```
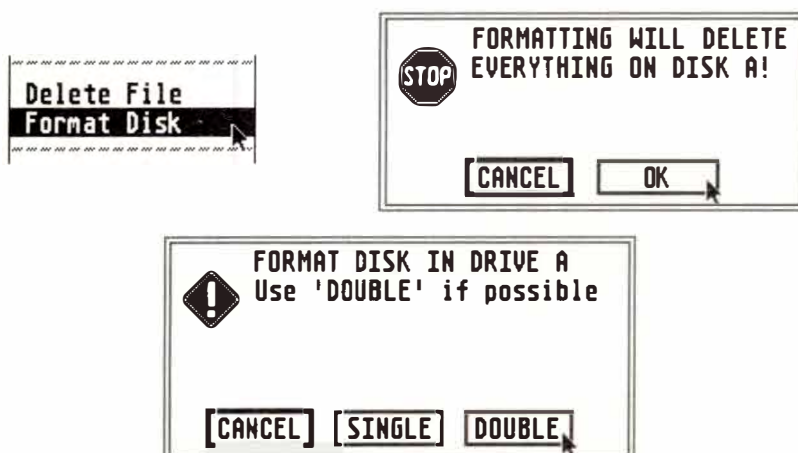
— Now go to the "File" menu again and select "Save SONG" (this is a global save that saves everything you have done). The "File/Item Selector Box" will appear. Type in a name for your "song" of up to eight characters long and click "OK".

Your music is now being saved to the disk, after which the display will tell you how much space is left on the disk. Click "OK".

```
 _____        Selection:      _____
| File      |         |                      | 685 kByte are free     |
| Load  S O N G       |       SONG    .SON|   | on Drive A             |
| Save  S O N G  \    |        [  OK  \]     |     [  OK  ]            |
|_____|                      |_____|
```
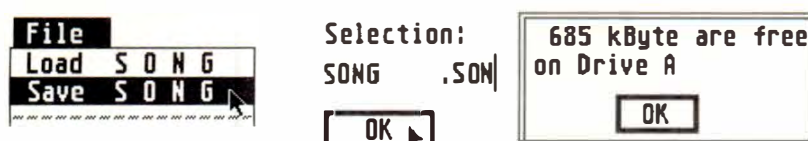
Next time you save a song, you do not have to format: this needs doing only once if you are beginning a virgin disk.

Now read Chapter 6 "TRACKS" if you want to know more about the "track parameter" values you can set for each track in the "TRACK" box on the main page. "QUANTIZE" is an important parameter as it affects the timing of the performance in the track.

First Steps
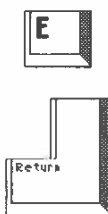
Read Chapters 5: "POSITIONING" and 16: "COPY, MERGE ...etc" to find out more about recording and playback.

To find out more about editing individual notes and to find the NOTATOR ALPHA score editor, press the 'E' key or click the "EDIT" icon after selecting a track: this opens the "event editor" for that track (refer to Chapter 9: "EVENT EDITOR"). Press 'E' again to return to the main page, or press 'Return'.

1. Mouse

The mouse moves the "mouse pointer" on the screen. It is the friendly "interface" between you and the program. If desired, it can be bypassed in many cases by direct use of the computer keyboard.

There are many great ways of getting NOTATOR ALPHA to do what you want by using the mouse and/ or the ST keyboard (see also the Atari's manual for advice on clicking, dragging etc).

By placing the mouse pointer on something on the screen, virtually every object on the NOTATOR AL-PHA screen is addressable via the mouse either by **clicking** (as in "CYCLE", "START" etc) with one or other of the mouse buttons, **double-clicking** (as in naming a pattern, track etc), **dragging** (as in deleting a track) or **scrolling** (as in altering the Main Bar Counter value).

Click: with the mouse pointer on the desired object, momentarily depress the **left mouse button** — do not hold it. Careful not to move the mouse while you click. If the instruction is to click with the right mouse button, you will be told.

Double-click: with the mouse pointer on the desired object, momentarily depress the left mouse button twice in quick succession. Careful not to move the mouse while you click.

Drag: with the mouse pointer on the desired object, **depress and hold** the left mouse button — do not release it yet. Now move the mouse pointer, which now shows as a hand instead of the usual pointer, to the desired destination. Release the button.

Scroll: see the sections below on ways of altering values.

With some functions, a "dialog box" will appear on the screen where you can select further options. After you have clicked the required option or directly set the value, you can leave the dialog box via the "OK" icon. "Cancel" aborts the function without any alteration. You will notice that one of the icons will often have an enlarged border. This is the "default" icon, which can be selected by pressing 'Return'.
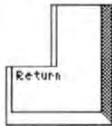
The mouse pointer will sometimes turn into a "busy bee" when the calculations are less than instant.
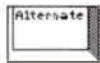
If you forget your mouse somewhere, the mouse pointer can still be moved by using the cursor arrow keys on the computer keyboard while 'Alternate' is kept depressed. Using the 'Shift' key will allow finer pointer movements, and the mouse buttons are represented by the 'Insert' and 'Clr Home' keys.

"Scrolling" means changing an object such as a time value (the Main Bar Counter, note length in the event list etc) or other "amount" or "multi-choice" value ("QUANTIZE" etc), using the mouse buttons.

Many of these scrollable values are hidden in (what might be described as) "hotspots", little areas on the screen where clicking makes values appear "out of thin air", such as the "track parameters" (eg "TRANSPOSE", "VELOCITY" etc).

Step-by-step: place the pointer on the value or "hotspot" and click it with single clicks with either mouse button. Larger amounts: place the pointer on the value or "hotspot" and depress and hold either mouse button. Adding the other button during the scrolling will speed-up the process.

The direction of scroll depends on the mouse button: the left button represents "up/more", the right button "down/less". Pointing accuracy is important as you are allowed, for example, to scroll the individual columns of a time value.

The meaning of these two buttons can be swapped by pressing 'Shift-Z' simultaneously ("Swap Mouse Buttons").

1.2 'Control' + Mouse feature
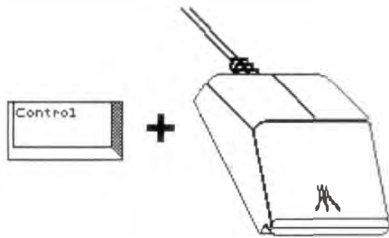
An alternative way to scroll values which is incredibly useful for some functions in certain situations is the 'Control'+ mouse feature:

Point with the mouse pointer (do not click!) at the value you want to change and hold 'Control', and the pointer changes into a cross: sliding the mouse forwards or backwards now increases or decreases the value while 'Control' is kept depressed. Changes are not transmitted while 'Control' is still pressed, only when it is released.

Left-clicking the mouse (while 'Control' is held) will reset the value to "zero/default". This allows you to instantly zero a large value, or to use the feature near the borders of the screen, which would otherwise get in the way: point, press and hold 'Control', move the mouse to the opposite side of the screen, left-click, and now you can alter the values by any amount you like.

2. Computer keyboard

The computer's keyboard can be used for many activities; for many of these it can replace the mouse (mainly for speed eg some people find it easier to press 'E' to enter or quit the event editor than the equivalent mouse moves), or can be used together with the mouse (such as the 'Control' + mouse feature described above). Most people use a combination of mouse and keyboard to carry out their work — whatever is easiest.

A useful feature is the ability to enter values directly into certain parts of the programs via the calculator keypad.

The numbers must be entered quite quickly one after the other, but take care to avoid starting a number with the '0' key which gives the start command.

3 - 4   General Handling

The '+' and '-' keys are also useful for changing values; adding 'Shift' speeds up the process.
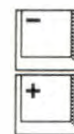
To find out where the calculator keypad or '+' and '-' keys can be used, look for a screen cursor: this either takes the form of a black rectangular "highlighter" that travels about the screen, depending on where you have clicked, or of a faint, flashing surround usually found in the various windows.

There is a clicking sound over the monitor whenever you press a key and the monitor's volume is turned up: many people prefer to turn this noise right off, and to use the "MIDI click" feature as a metronome (see below).

At the top of the screen is the "menu bar" showing the "menu headings" of the various "menu options". As soon as the mouse pointer touches a heading, a menu will pop down containing options you can select by clicking. If none of the options is required, click anywhere outside the menu to cancel it.

Some options act as "latching switches" (eg "MIDI Click" in the "Options" menu) and have a tick to show when active; some act as "momentary switches" and send a command message when clicked (eg "Maximum Volume" in the "Options" menu); some open up a further window for more decisions (eg "Count-in" in the "Options" menu); some give you access to other parts of the program (eg "Notepad" in the "Options" menu).

3. Menu

`▮▯│││││││┃▯▯▯▯ 1 1 1 1 NOTE  1  E3  64      1 47▮`

MIDI is a communications language that tells a re-ceiving device all about a musical <u>performance;</u> it consists of a string of "events" that are instructions sent to a MIDI device telling it what it should be do-ing at a given moment, eg "play a note", "louder", "add vibrato", etc.

An "event" represents the smallest unit in the NOTA-TOR ALPHA hierarchy of data. Recorded MIDI data takes the form of a list of events with their time posi-tions. There are several types ("STATUS") of events: eg the movement of the modulation wheel is stored in the form of many single "Control 1" events, which describe the position of the wheel at certain points in time; a note consists of a Note On event and a Note Off event with a corresponding note number (pitch) and velocity; etc.

1. Event

A "track" in NOTATOR ALPHA provides space to record any number of notes and other events, and is roughly the MIDI equivalent to a tape recorder track. A track is normally used to record events that belong together, eg a bassline, percussion track or string of volume commands.

2. Track

A track can contain as many simultaneous notes as you like, and can be as long as you like. Each track is independent and can be processed by the "track para-meters", edited and copied quite separately one from the other.

The MIDI Thru function is defined by whatever para-meters you set in an empty track.

Definitions

3. Pattern

A "pattern" in NOTATOR ALPHA is no more/no less than a handy organizational way of collectively processing, editing, copying, generally "manipulating", from 1 to 16 tracks of MIDI music at a time. Think of it as a "handle" on a number of tracks which belong together.

A pattern can be as long or as short as you like (it is, if you think about it, as long or as short as the length of the longest track, though this length is overridable in the arrange list — see below). One of the main uses for a pattern is to collectively move tracks around in the arrange list, where you assemble a song or arrangement (see below). A pattern of tracks can form part of a song (eg verse) or symphony (eg overture), in which case you would use the arrange list to assemble the finished product; on the other hand, a pattern could contain the whole song or symphony within the one pattern.

Any of these 99 patterns can be worked on individually when the arrange mode is "OFF" by selecting the desired pattern number.

In point of fact, there is a limit on the length of a track or pattern of some 1356 bars. This lasts about 45 minutes at 120 beats per minute, more than enough for every conceivable situation.

4. Arrange mode

When the "ARRANGE" icon is clicked to "ON" in the "information bar", it is the arrange mode's "pattern list" that dictates what you will hear when "START" is clicked.

NOTATOR ALPHA will play patterns in the order in which you have entered them in the list. Think of the arrange mode as being a "sequencer for patterns" within the main sequencer. Each horizontal line of the list contains a pattern entry which explains when that pattern should play and for how long. Each pattern in turn contains a collection of tracks which play their events accordingly.

Every pattern in the list is on a different line to allow you to give a name or description to each entry.

Each pattern could represent the various parts of a song (intro, verse, chorus etc), in which case the arrange list would have a series of patterns following each other.

When the arrange mode is switched off, you can determine which pattern's tracks will be heard by scrolling to the desired pattern number above the pattern window.

All time and length values throughout NOTATOR ALPHA are shown as four columns:

1st column:	bar number	eg first bar
2nd column:	beat	eg first quarter note
3rd column:	beat subdivision	eg first 1/16th
4th column:	pulse	eg first 1/768th

The third column's values reflect the setting of the "display format" (see below). The fourth column's values are subdivisions of this display format, and are not really musical units of time, but are very necessary when you have such a high resolution as NOTATOR ALPHA's; they represent the smallest unit of time in the programs, so-called clock ticks or "pulses".

Note the difference between a time position and a length display:

Where a display shows a time <u>position,</u> it will show the current time as being, say, "1 2 3 1", which is:

<u>in</u> bar 1
<u>on</u> the second beat
<u>on</u> the third sixteenth of that beat
<u>on</u> the first pulse of that sixteenth.

Where a display shows a musical <u>length,</u> such as a note's or pattern's, it will show the length in absolute terms: so, if a note is exactly four-and-a-half bars long, the display will show "4 2 0 0", which is a length of exactly:

4 bars
2 beats
no sixteenths
no pulses.

1. Position and length displays in musical terms

These NOTATOR ALPHA four-column displays act rather like a car's tripmeter: once the pulse column has clocked up the required number of pulses (48 per sixteenth), it starts again from its 1 and the sixteenths column registers 2; when the sixteenths column has clocked up the required number of 1/16ths (4 per beat), it starts again from its 1 and the beats column registers 2 ...etc.

This system means you are never faced with having to work out "how many 1/16ths are 157 pulses?" (answer: 3/16ths and 13 pulses).

Positions before the official first beat (the "down-beat", as it is called in music) are displayed as smaller values than "1 1 1 1", eg "0 3 1 1" (bar "zero", the one before the first bar). Lengths less than a bar show a blank where the bar number normally is (same goes for beat and 1/16ths).

1.1 Current position: the Main Bar Counter
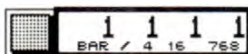
The display at the top right of the screen, at the right-hand end of the "information bar", is the "Main Bar Counter". It shows, in musical terms, the current position of the piece of music being played. It consists of the four columns as described above.

The small grey "button" directly to the left of the Main Bar Counter represents a "counter reset" button: click it once to make the Main Bar Counter jump to the first beat of the bar displayed, click it again to re-set the counter to "1 1 1 1".

The Main Bar Counter can be scrolled during recording or playback, whereupon the music will jump to the new setting.

The second column of any time display (the beat) is affected by the time signature (you can see it in the "information bar" along the top of the screen). The third column (the beat subdivision) is affected by the "display format" (also in the "information bar").

The display format affects the <u>display of time positions and lengths only,</u> and subdivides the beat into musical units, usually 1/16ths. In NOTATOR ALPHA's score editor, it acts as a "ceiling" or "clamp" on values: if set to "1/16", any length shorter than a 1/16th will be shown as a 1/16th, and the distance between notes <u>displayed on the stave</u> cannot be less than 1/16th. This is very useful if the score editor is showing notes that you have recorded in "realtime" from an instrument.

With "Signature Changes" in the "Edit" menu switched off, the displayed time signature in the "information bar" remains valid for the duration of the whole piece.

You can select the time signature by direct clicking of the "SIGNATURE" display.

You must switch on "Signature Changes" ("Edit" menu), before you can insert any signature changes.

Switch on "Signature Changes" and scroll the Main Bar Counter to the desired bar position. Ensure it is rounded off to a whole bar (eg "5 1 1 1"), then alter the "SIGNATURE" display in the "information bar" to the desired value.

1.2 How time signature and display format affect time displays

1.3 Time signature

1.3.1 Basic time signature

1.3.2 Time signature changes
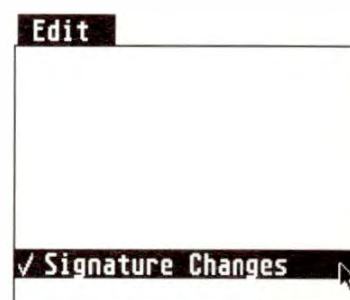
The new value remains in force until the next time signature. Repeat for each bar where there is a signature change.

You can also enter your changes direct onto the score editor stave (which switches on "Signature Changes" automatically).

Switching off "Signature Changes" ("Edit" menu) deletes all time signature changes (and all NOTATOR ALPHA's double bar signs).

Time signature changes have a global effect on the whole program and will be reflected in all bar position counters, including the arrange list.

A time signature "belongs to" a bar position. It does not belong to a track or pattern.

You cannot have more than one time signature change in one bar.

Advice: because time signatures belong to a bar position, it requires serious planning ahead, especially if you intend to have more than one ore two. Once they are in place, changing your mind about the structure of the piece of music could mean having to delete the first ones and inserting them again in their new positions. This applies whether working in a single long pattern or in the arrange mode.

Ideally, be clear about what structure your music will have before inserting time signature changes, and do not forget to include the song count-in in your calculations. It may help to map out the position of time signature changes on a piece of paper before starting.

If possible, enter the time signature changes before starting to record the music. You may enter time signature changes after you have started, but you will then have to correct the pattern lengths in the arrange list: introducing time signature changes into a song after you have already assembled the arrange list will always result in pattern length changes (producing unexpected start-bar and Pattern POSITION values): each time you introduce a time signature, you must correct the lengths of the entries throughout the list.

To show you why these lengths change: if you have an entry, say, 4 bars (= 16 beats) long in 4/4 time, changing the time signature to, say, 3/4 means re-dividing the 16 beats by 3, which results in a "Pattern LENGTH" of "5 1 0 0": 5 bars and 1 beat.

Tip 1: because time signature changes belong to specific bar positions, it is not possible to work on a pattern with the arrange mode switched off, give it its time signature changes, then place the pattern somewhere else in the arrange list. The time signature change(s) will remain where they were, they do not move with the pattern, so you must insert the time signature separately.

Tip 2: if, with arrange mode switched off, you give pattern 9 a 3/4 signature in bar 7, then select a different pattern in the pattern window, that too will have the same signature change in the same place, because bar 7 is <u>bar 7 of the program,</u> not of a particular pattern or track.

Positioning

2. Transport functions

2.1 Transport controls

Since NOTATOR ALPHA is designed to be at the centre of a "tapeless studio" environment (so far as a MIDI system goes), it makes sense to simulate the operation of a tape recorder's "transport mechanism" with its well-proven and user-friendly controls; the terms used in NOTATOR ALPHA-speak, such as "Start", "Stop", "Record", will be familiar to most musicians.

The functions are controlled by the collection of clickable icons, representing tape recorder-style "transport" controls, on the right of the screen.

"START": = large "Zero" key (also available from within the event editor)

Sequencer jumps to its start position (normally Main Bar Counter "1 1 1 1") **and starts.**

With the arrange mode "OFF", the sequencer will jump to and start at bar 1.

With the arrange mode "ON", the sequencer will jump to and start at the beginning of the currently-selected pattern in the arrange list.

With the CYCLE mode "ON", the sequencer will jump to and start at the position of the left locator.

Selecting START after recording without first pressing STOP is the quickest way of playing back what has just been recorded: the recording will be ended and the notes etc assigned to the currently-selected track.

"PAUSE/CONTINUE": = '.' key (also available from within the event editor)

If the sequencer is already stopped, it will continue from the Main Bar Counter's current position.

If the sequencer is running, it will stop and remain at that time position; if you were in record mode, NOTATOR ALPHA will remain in record mode.

STOP: = left-click or 'Enter' key (also available from within the event editor)

The sequencer will stop. Any recording will be ended and the notes etc will be assigned to the cursored track.

If NOTATOR ALPHA were already stopped, another stop command will make them jump back to the Main Bar Counter's 1 1 1 1 position; at the same time many synthesizer MIDI functions (pitch wheel, modulation, sustain pedal etc) will be reset (the same effect can be had by double-clicking STOP or pressing the 'Help' key).

STOP: = right-click

If the sequencer is in playback mode, this command has no effect.

If the sequencer is in record mode, it will come out of record mode but will continue running without interruption.

Positioning

RECORD

*

RECORD: = '*' key (also available from within the event editor)

A recording is started in the current track, including a count-in (you can record during this count-in). Any previously-recorded material on the same track will be <u>deleted</u> (you can retrieve this by using the "UNDO" function).

The same rules apply as with the START command: RECORD makes the sequencer jump to Main Bar Counter position 1 1 1 1 (less the count-in) if the arrange mode is "OFF"; if the arrange mode is "ON", the sequencer will start recording at the beginning of the current track in the current arrange pattern, and the count-in means you will hear the last bar of the previous pattern.

You will remain in record mode until a STOP or START command is received.

Once you are in record mode with the arrange mode "ON", you remain in that track in that pattern for the duration: you do not "jump" from pattern to pattern as the arrange list scrolls.

Positioning

BAR REWIND (<<): '[' key

BAR FORWARD (>>): ']' key

These make the Main Bar Counter "spool" from bar-beginning to bar-beginning. These commands can be given during recording or playback which allows you to hear the sequencer "spooling".

The Main Bar Counter itself can be directly mouse-scrolled instead: you can move more quickly within the music but you only hear the end result when the scrolling stops, not while you are scrolling.

These two position displays, called "locators", represent beginning and end points for various activities; they are called "left" and "right" to mimic a recording tape that has a left and a right end.

A left-click on the words "left" or "right" of the locators will make the sequencer jump to that locator position, whether in stop, playback or record modes.

A right-click on the words "left" or "right" of the locators will transfer the Main Bar Counter position onto that locator, rounded to the nearest whole bar. Press 'Shift' at the same time to prevent the display from being rounded off, so you can set exact cue points "on-the-fly" to the nearest 1/768th note.
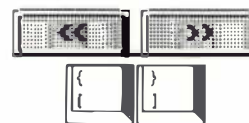
3. Cycle mode, Locators und Autolocator

3.1 Left and right locators

Positioning

X

The 'X' key will also load the start and end points of the current arrange pattern into the locators, with the added feature of automatically switching on the cycle mode.

3.2 Autolocator: storing and recalling

The Atari's "Function keys" 'F3' to 'F10' can be used to recall eight combinations of left/right locator positions. The sequencer jumps to the left locator position whether in stop, playback or record modes.

Shift

To store each combination, set the desired left/ right locations (not the Main Bar Counter itself) and press 'Shift' and one of the eight "Function" keys. Autolocator positions are stored in a ".SON" song file.

The Autolocator is also active from within the event editor.

3.3 Cycle mode

O N
CYCLE

When "CYCLE" is "ON", the section between the left and right locators is constantly repeated (this would be called "shuttling" on a tape recorder). As soon as the right locator position is reached, in playback or record modes, the sequencer jumps immediately back to the left locator position.

The left locator position always <u>includes</u> its position, whereas the right locator position <u>does not include</u> its position. In other words, a cycle from "1 1 1 1" to "5 1 1 1" allows you to record data on the "1 1 1 1", but the right locator position represents the position <u>at which</u> the cycle goes back, so you can record up to the pulse before "5 1 1 1".

Positioning

Both locators represent a bar position in the same way as the Main Bar Counter. If for example you only want to hear bars 10 and 11 in order to be able to work on some musical ideas, you would set the left locator to "10 1 1 1", and the right one to "12 1 1 1". As soon as the right locator has been reached, a jump to the left locator will take place.

As well as cycling within a pattern, you can cycle within the arrange list, where your cycle can include many patterns.

The cycle mode exists purely to help you with your work and has nothing to do with assembling the structure of a piece, in the same way that you would not use "tape shuttling" to construct your song in the studio! Repeating sections as part of a composition are done with the use the arrange mode (Chapter 17), and the "Segment Copy" function (Chapter 16).

Use of the 'X' key switches CYCLE on and loads the locators with the start and end times of the current pattern's position in the arrange list, rounded-off to the nearest bar. This is of help in, for instance, live situations where a solo can be made longer on the spur of the moment just by hitting 'X' during the first pass of the solo pattern. Switch off CYCLE to carry on as normal.

```
┌─────────────────────────────────────┐
│ ░░░░░░░░░  TRACK:  6  ░░░░░░░░░░░░░  │
│ ▓CHANNEL▓      1                     │
│                      ┌─────┐ ┌─────┐ │
│ QUANTIZE  768        │SOLO │ │UNDO │ │
│                      └─────┘ └─────┘ │
│ TRANSPOS             ┌─────────────┐ │
│                      │    EDIT     │ │
│ VELOCITY             └─────────────┘ │
└─────────────────────────────────────┘
```

1. General

1.1 What are NOTATOR ALPHA's "track parameters"?
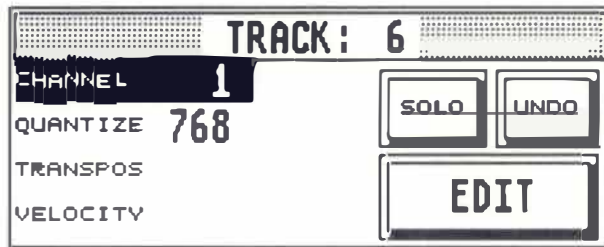
"Track parameters" are technically described as "playback parameters" since they do not alter the events which are recorded in the computer's memory, but act solely on data **as it flows out of the sequencer in playback mode**. Because they are "playback parameters" that do not alter the events which are recorded in the computer's memory, the effect of these track parameters **cannot be seen in the event editor**.

One exception to this "no alter" rule is the "QUANTIZE" parameter: the effect of this track parameter **will be seen in the event editor** as if it were altering the data in the memory, though in reality it is a "playback" parameter like all the others. This is done for a reason — see below.

The track parameter box shows all the track parameters relating to the track selected in the pattern window.

The righthand edge of the pattern window shows the values of the track parameter which has the cursor on it in the track parameter box.

That way you can see virtually *all* the parameters of a track at the same time as *one* parameter for all the tracks.

1.2 Empty tracks

An "empty" track shows an empty, white space in the STATUS column (down the lefthand edge of the pattern window) and has no name.

All "empty" tracks receive the same track parameters (Channel, Transpose etc) due to an autocopy feature that ensures that if you set a track parameter in one empty track, it will auto-copy to all the other empty tracks.

The track parameters of any <u>empty</u> track are used by NOTATOR ALPHA's MIDI Thru function, and so affect what you are playing live.

As soon as a track is recorded or initialized, it is "removed" from the MIDI Thru function. Its track parameters are no longer changed by the auto-copy feature.

1.2.1 MIDI Thru

The MIDI Thru function's job is to immediately pass on data that arrives at the computer's MIDI Input to the MIDI Output and on to a MIDI instrument. This makes it possible to simultaneously hear the instrument that you want to record with, without having to wait for playback.

In the "MIDI THRU" box below the pattern window, click the word "ON/off" to enable or disable the MIDI Thru function. Normally, leave it on.

The track parameters of any <u>empty</u> track are used by NOTATOR ALPHA's MIDI Thru function, and so affect what you are playing live *(see above Section 1.2).*

The "MIDI THRU" box below the pattern window shows the velocity of the notes you are playing live in the form of a horizontal beam when the MIDI Thru function is switched on.

An empty track becomes "recorded" by:

— recording data into it in realtime
— entering events manually into any of the event editor's various editors
— using one of the copy functions to transfer data to the empty track

An empty track is initialized by:

— use of the initializing key command 'Shift-Backspace'
— double-clicking the empty track
— clicking the "EDIT" icon (below the track parameter box) or pressing 'E': this produces a dialog box which asks whether you wish to enter this empty track's event editor. If you click "OK", then re-enter the main page by pressing 'E' again, you have just done what the 'Shift-Backspace' function does much more easily!

"Initializing" allows you to prepare a track's name, MIDI track parameters and display parameters prior to working.

You can then regain access to a track's various parameters by pressing the key below the 'Delete' key (GB: '#') which auto-copies the cursored track's parameters to all the empty (ie MIDI Thru) tracks.

When a recorded or initialized track is erased, its track parameters and its display parameters will be auto-copied to all the empty tracks.

1.4 Track name

A recorded or initialized track can be named by double-clicking in the space just to the right of the track number or by using 'Shift-Backspace'.

Type in the name, using 'Esc', 'Backspace' or 'Delete' to delete characters and the cursor arrows to move around, then click "OK".

A recorded track first shows "**OK**" as temporary track name after each new realtime recording. Other "recording" and initializing methods (see above) show "*New*" as temporary track name.

The name is purely for your reference: it makes sense to name tracks as you record so you know which track is which.

1.5 Status column in the pattern window

Down the lefthand edge of the pattern window is the STATUS column, giving certain information on each track:

white: empty track *(see 1.2 above)*
black: recorded or initialized track *(see 1.3 above)*
*:   HIDE — track will not be heard *(see 1.6 below)*

1.5.1 Velocity level/peak meter

Velocity ——⬛ 8 trckname
Peak Level (127) ——⬛ 9 trckname

The velocities of MIDI notes playing in a track are represented by a little grey beam in the status column that mimics a recording desk's "level meter". This changes to a speckled white beam when notes reach the maximum MIDI velocity value of 127 ("peaking"). There is, of course, no harm done if "peaking" takes place *(see 2.4 below)*.

Click the status column of a track, or press the 'H' key, to prevent the data of the entire track from being transmitted: click again to un-Hide.

hidden track ──┤ **✳** ┃ 4 trckname

A "*" appears in the status column to indicate that the track is "hidden".

HIDE can be used for "keeping to one side" tracks you have no immediate use for.

Hidden tracks will not be displayed in the score editor.

Clicking the "SOLO" above the "EDIT" icon will solo the cursored track in the pattern window.

Alternatively press 'O'. To solo in the event editor, press 'O'. You can change tracks while in solo mode; also, the same track in each pattern of the arrange list will be soloed in turn as the arrange cursor moves.

SOLO

0

2. Track parameters

2.1 Channel

This is where you select the MIDI Channel for a track (or for the MIDI Thru function if it's an empty track).

This allows the track or the MIDI Thru function to "talk to" a synthesizer which is set to receive data on the same Channel.

Empty tracks control the MIDI Thru function: to play an instrument set to receive on Channel 3, you must set "3" in an empty track's CHANNEL parameter, so that incoming MIDI data from your keyboard is diverted there in realtime — your keyboard's transmit Channel is irrelevant.

If you find that one of your MIDI devices plays every note that the sequencer puts out, regardless of the MIDI Channel, then you should ensure that it (and all your other devices) is set to "OMNI OFF" mode ("MIDI Mode 3") ... assuming that you want each device to play each musical part separately *(see Chapter 18: "OVERALL SETTINGS", section 2 "MIDI Reset messages")*.

MIDI Thru function: if you set a CHANNEL parameter in an empty track, you can choose which instrument your keyboard will play live.

Each of the 16 MIDI Channels in NOTATOR AL-PHA can be given a name by double-clicking the space in the track just to the left of the Channel number.

```
█████  1 trckname ch.-name    3
        2                     ▔
        3        [Ch.-name][OK]
```
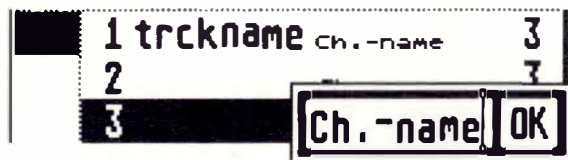
A name is easier to remember and identify than a number, especially where you are using many Channels.

As well as double-clicking to name, you can press the 'Esc' key after having pressed the 'Clr Home' key.

Remember you are naming the <u>Channel,</u> and the Channel is independent of the track, so it does not matter which track you use to enter the Channel name. Normally, the task is done as a preparation, before you start recording the material, and is normally done by scrolling the CHANNEL parameter in an empty track and naming as you go. The Channels need to be named only once, of course, since from now on, selecting a MIDI Channel will automatically display its name.

Type in the name, using 'Esc', 'Backspace' or 'Delete' to delete characters and the cursor arrows to move around, then click "OK".

Tracks

If you tend to use the same Channels for the same devices when you work, then you may find it useful to name an empty song's Channels with your instruments' names (eg "Yam SY77", "Roland D5" etc) and save this default song to your program disk by calling it "AUTOLOAD.SON", so that it loads automatically with the program from now on *(Chapter 20: "DISK OPERATIONS", section 2.3).*

2.2 Quantize
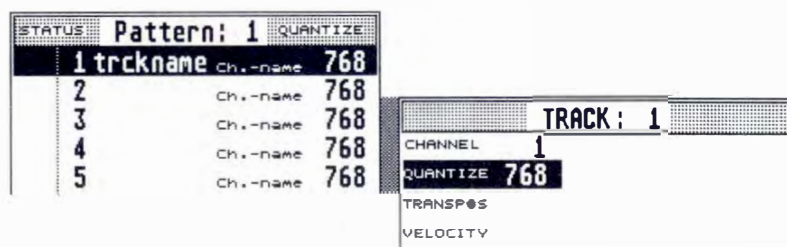
This auto-corrects the time positions of notes by varying degrees. *Please read Chapter 15: "QUANTIZATION".*

MIDI Thru function: QUANTIZE has no effect on the MIDI Thru function.

2.3 Transpose
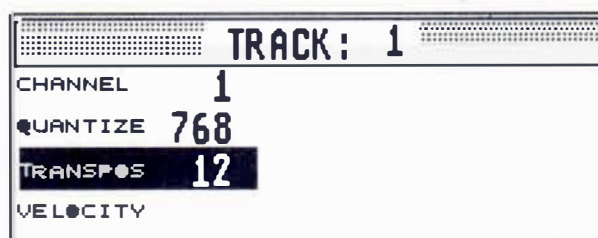
This track parameter transposes data by up to +/- 96 semitones; being a "playback" parameter, its effect will not be seen in the event editor.

MIDI Thru function: if you set a TRANSPOSE parameter in an empty track, you can transpose your keyboard live as you play.

"Quick-step": scrolling TRANSPOSE track parameter in "musically-useful" steps:

Giving a short click right at the end of the word "TRANSPOSE" will make the values jump in octaves.

```
╔═══════════════════════════════════════╗
║ ░░░░░░░░░░░░  TRACK:  1  ░░░░░░░░░░   ║
║ CHANNEL    1      ┌──────┐ ┌──────┐  ║
║ QUANTIZE  768     │ SOLO │ │ UNDO │  ║
║ TRANSPOS   12     └──────┘ └──────┘  ║
║ ▐VELOCITY 127▌     │    EDIT      │   ║
╚═══════════════════════════════════════╝
```

Many synthesizers will recognize the dynamics of a keyboard player's technique, ie how "hard" or "soft" the keys are struck. The resultant "velocity" value can be used to control various synthesizer functions which are used to simulate the "brightness" or "loudness" of the note's attack or other parameters within the synth.

Increasing or decreasing the track parameter "VELOCITY" value <u>adds to or subtracts from</u> the velocities that already belong to each note of the track.

Do not confuse "velocity" with "after touch" or "pressure" information, which is information about what happens to the note <u>after</u> the initial strike *(see Chapter 8: "TYPES OF EVENT", section 4 "Aftertouch")*.

Altering the velocity has an effect on the perceived volume of the notes, though the notes will generally also change timbre (how bright or dull the sound is) as the velocity is changed. Do not confuse "velocity" with "MIDI Volume" information, which is pure volume *(see Chapter 8: "TYPES OF EVENT", section 5 "Control Change")*.
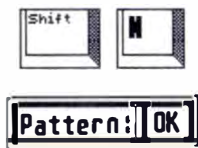
MIDI velocity values go from 1 (minimum) to 127 (maximum). This means that there will come a point (depending on the individual notes' velocity values) beyond which further increases of the VELOCITY value will have no effect. It is at this point that a "limiter" effect comes into force whereby the difference between loud and soft notes becomes less and less as the VELOCITY value is increased. The "level/peak meter" in the status column "peaks" when a note being played has a velocity value of 127.

MIDI Thru function: if you set a VELOCITY parameter in an empty track, you can affect the velocity of your keyboard live as you play.

3. Pattern name

Each of the 99 patterns can be named by double-clicking where it says "Pattern" at the head of the window or pressing 'Shift-N'.

The name will be automatically forced onto the arrange pattern of the same number in the arrange list.

You can subsequently rewrite a different name by double-clicking the arrange pattern itself.

Type in the name, using 'Esc', 'Backspace' or 'Delete' to delete characters and the cursor arrows to move around, then click "OK".
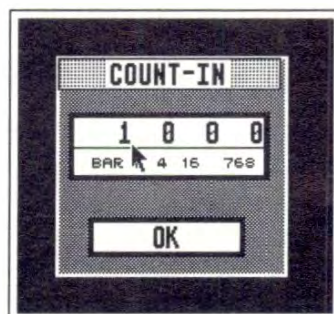
RECORDING

During a recording, the Atari monitor's loudspeaker will give out a metronomic "click". This metronomic click over the loudspeaker is normally present only when in RECORD mode. You may prefer not to use this, but to use the "MIDI Click" feature instead, so just turn down the monitor's loudspeaker.

If "MIDI Click" is enabled in the "Options" menu, a short metronomic note will be sent: its MIDI Channel, pitch and velocity are settable in the "MIDI Click Settings" window in the "Options" menu (or left-click the black beam in the "MIDI THRU" box at the bottom of the main page). The settings can be altered while you are in record mode — you will hear the changes as they are made *(see Chapter 18: "OVERALL SETTINGS", section 1 "MIDI Click")*.

These MIDI click settings are storable as part of a NOTATOR ALPHA "AUTOLOAD SONG" — *see Chapter 20: "DISK OPERATIONS", section 2.3.*

The "Options" menu has the "Play Click" option which switches on the metronomic click in playback mode.

The count-in, which comes defaulted to one bar, can be altered under "count-in" in the "Options" menu. The display shows bars in absolute lengths: eg 1 0 0 0 means exactly one bar's count-in.

1. Metronome, MIDI Click, Count-In
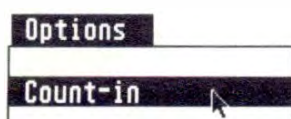
NOTATOR ALPHA allows you to record during the count-in. In the arrange mode, the seqencer starts with the last bars of the previous pattern, depending on your count-in length.

It is important in most cases to record, listening to the metronomic click. Only by keeping as close as possible to the click can you be sure that:

— QUANTIZE will function correctly;
— the notation in the score editor will look cor-
rect.

2. Ways of recording

2.1 Simple recording

Record: pressing the '*' key at the top right of the calculator keypad (or click RECORD) will erase any existing data in the current track and will record new data.

Straight after recording, the 'Undo' key will toggle between any old data and the new.

2.2 Recording in the Cycle mode

You may record data while cycling between two locator points.

"Record-cycle" is where fresh data from each successive layer of the cycle mode in record mode is merged into the previous layer(s) without damaging the previous layer(s). This method is similar to a drum machine's record mode.

Click "CYCLE" "ON" and set the left and right locator positions. Now start recording as usual: the sequencer will play as far as the right locator and immediately start again at the left locator etc until you press STOP.

In the event editor, the sequencer distinguishes between the first four layers by internally assigning to each layer's events a Voice number corresponding to the layer number. All subsequent layers are assigned to the first Voice.

All the layers are in the current recording track.

Be careful that the layering of events other than notes, such as pitch-bend data, can lead to weird results. Also, do not record-cycle System Exclusive data.

A Quantize value given to an empty track before you start recording will automatically quantize the track as soon as you press STOP or START after recording,

This "auto-quantize" is no different from quantizing a track manually after recording: it just saves time every time you record.

Clicking "UNDO" (or pressing the 'Undo' key) will reverse the effect of the last deleting, event-altering, or re-recording operation made in one track.

This is a useful "face-saver" if you have inadvertently done something you wish you had not, such as erasing a track, or recording over a track. You can even toggle between the old and new versions.

UNDO is not available where more than one track is involved, nor is it available in the event editor.

2.3 "Auto-quantize after recording"

3. Undo

UNDO

Undo

A MIDI event is a little packet of information. It consists of up to four smaller packets of data:

— Status *(what the event is)*
— MIDI Channel
— "First data byte" *(what it is depends on the status)*
— "Second data byte" *(what it is also depends on the status: some events don't make use of the second data byte)*

In a MIDI event, the Channel value belongs to the "status byte".

The "first" and "second data bytes" change their meanings according to the event's status. In the event list, their columns are each headed "-1-" or "ONE", and "-2-" or "TWO".

NOTATOR ALPHA also uses P_USER events. These are "house-keeping" events that organize things within the program and are not transmitted via MIDI.

1. Note On, Note Off

```
1 1 1 1 NOTE    1 E3  64   2  0    →
1 1 3 1 NOTE    1 E3  off
```

MIDI Spec 1.0 defines a note as consisting of two separate events: a Note On event and Note Off event.

The "first data byte" of a Note On event defines the note's pitch (eg C3); the "second data byte" defines the note's velocity (how hard it was struck).

The note will continue playing until it receives a command to turn it off. There are two ways of switching a note off:

— A second Note On event of the same pitch, but with a "second data byte" value of zero (ie zero velocity);
— An official Note Off event: in this case, the "second data byte" can define the key's "release velocity", ie how fast you let go the key after playing it.

So there are two ways of issuing a "switch that note off" command. They both have exactly the same effect on a note; in theory, the official Note Off event has the advantage of giving the musician greater expressive control over a sound, but in reality there are very few MIDI devices that respond to a release velocity. Also, they both tend to be called "Note Off" events or commands.

(In fact, the "Note On with zero velocity" event is technically preferable because it takes advantage of the "Running Status" facility of MIDI, which allows the transmission rate of events to be a little higher.)

In NOTATOR ALPHA, there is never any need to bother about Note Off events as these are automatically dealt with by the program; where you see the words Note On on the screen, you may safely assume that the Note Off is being taken care of.

1 1 1 1 PitchWh   0 64 ——→

2. Pitch Bend Change

A Pitch Bend Change (also called Pitch Wheel) event (displayed as "Pitch Wh" in the event list) defines the amount of pitch change away from the keyed note. These events define the amount of change up to the limit set in the synthesizer. So if the synth is set to a pitch change limit of a tone, the maximum Pitch Wheel event value will send the pitch up/down a tone, and no more. So different synths will react differently to the same Pitch Wheel events, depending on what you have set as being their limit.

The "second data byte" is the deciding value: 64 is the normal resting value, 0 means "maximum bend down" and 127 means "maximum bend up".

In theory, the "first data byte" allows very fine steps between the steps of the "second data byte". In practice, though, it is normally left at zero, and even if sent, most synthesizers completely ignore it.

3. Program Change

1 1 1 1 Program   88   ⟶   [display]
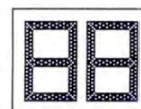
A "Program Change" event ("Program" in the event list) selects a numbered "memory slot" in a MIDI device, containing a sound, reverb effect etc.

A program event makes no use of the "second data byte", so it is left blank. The "first data byte" defines the Program number.

This Program number is correct for all devices which follow the standard MIDI configuration of having zero as the first Program, and which count in decimal. Some devices' Program banks start with "1" (eg Yamaha DX7), which means, for example, Program 27 will be interpreted by such a device as Program 28. With synthesizers which do not count in decimal, it is a good idea to make up your own chart showing the conversion of the device's Program number system to decimal.

All MIDI devices require a certain time to switch Programs. Although you are able to transmit a note and a Program event on the same Channel at the same time, while a Program is switching, the device cannot play anything, and will either ignore notes being sent to it, or will delay playing them until the new sound is in place: you may perceive a slight hesitation or "glitch".

This hesitation is not due to problems of "timing", but to the relatively slow reaction time of synthesizer hardware. Program events should therefore be transmitted where there are no notes being sent on that particular Channel.

Allow around 1/16th or 1/8th space before the next note is due to play, and be careful not to chop off the end of a note that is already playing, for example, one with a long "release time".

Be aware that multitimbral synths (ones that can respond to more than one Channel at a time) normally need more time to react to commands such as Program events than monotimbral ones.


```
1  1  1  1 C-Press    91
1  1  1  1 P-Press  E3 91
```
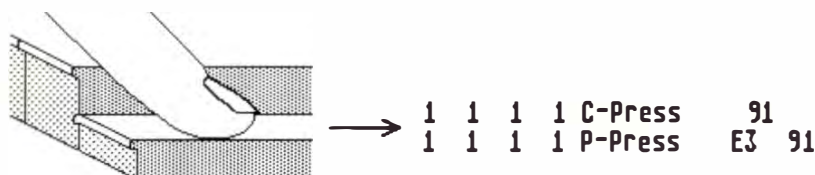
4. "Aftertouch": Channel Pressure and Polyphonic Pressure

"Aftertouch" or "pressure" events are transmitted by some synthesizers if you press on one or more keys after the initial keystrike. The values created by this subsequent pressure can be used by a synth to control sounds.

There are two types of Aftertouch events:

— **"Channel pressure"** (called "C-Press" in the event list) is currently the most common status of the two. It is "monophonic" (like the modulation wheel), in that it affects all the voices collectively, no matter which key is pressed. The "second data byte" is not used and not sent: the "first data byte" defines the amount of pressure.

— With **"Polyphonic pressure"** ("P-Press" in the event list) each key can send an individual amount of pressure. The pitch of the key ("first data byte") is transmitted as well as the pressure amount ("second data byte"). At present there are few keyboards which can send or receive this information.

Aftertouch information is often confused with velocity. They are, however, two completely different types of MIDI information. Velocity belongs to a Note On event and gives details as to how fast ("hard") the note has been initially struck. It is not an independent event on its own.

The two types of Aftertouch event are events in their own right and behave similarly to data given out by the modulation wheel.

5. Control Change

→ 1 1 1 1 Control 1   1   0 Mod. Wheel

Control events can affect important functions of a MIDI device. Which Control events are transmitted/received by a device depends on the device, so check your devices' "MIDI Implementation Charts".

List of common Control events:

DEFINITION	STATUS	—1—	—2—
Modulation Wh:	Control	1	(Amount)
Breath Control:	Control	2	(Amount)
Foot Pedal:	Control	4	(Amount)
Data Entry:	Control	6	(Amount)
Volume:	Control	7	(Amount)
Balance:	Control	8	(Amount)
Panning:	Control	10	(Amount)
Expression:	Control	11	(Amount)
Sustain On:	Control	64	127
Sustain Off:	Control	64	0
Portamento On:	Control	65	127
Portamento Off:	Control	65	0

There is not the space to deal with each Control event in detail but you can save yourself hours of reading by trying things out for yourself. NOTATOR ALPHA will allow you to record as usual while you are in the event editor. Whatever you input via MIDI will now be displayed in the event list as it happens.

```
1  1  1  1 SysExcl    4   0 Moog
1  1  1  1 SysExcl   19   0 Digidesign
1  1  1  1 SysExcl   41   0 PPG
```

6. System Exclusive

System Exclusive messages contain information specific to each manufacturer and to each instrument, and relate to specific areas such as the transmission of memory and sound data. These "SysEx" messages are transmitted in MIDI event form; the information itself, though, does not necessarily conform to MIDI protocol, which means that one manufacturer's SysEx data cannot be received by another.

NOTATOR ALPHA will record and play any SysEx data.

We recommend that you do not edit SysEx messages in the event editor apart from altering their MIDI time position.

There are virtually no restrictions in the way SysEx messages can be administered: any manufacturer, any instrument, any future MIDI device (if it conforms to the present day MIDI Spec) can be processed by NOTATOR ALPHA.

7. P_USER events

NOTATOR ALPHA uses additional "P_USER" types of event which control certain internal processes and are not transmitted via MIDI.

"P_USER" events are not MIDI events, but their structure is similar. Rather like a MIDI "Control" event, they have a function number and an alterable value.

These events control, for example, the graphical notation signs in the score editor: they appear in the event list when a notation symbol is entered onto the stave.

There are two "pages" in NOTATOR ALPHA: the <u>main page</u> which you see when you have loaded the program, and the <u>event editor</u> described here.

The event editor lets you view the event contents of each track and contains two editing areas which are fully editable and interactive with each other:

1. Event list with its own graphic display
2. Score editor

"Event list": displays every MIDI and P_USER event in a track in the form of an alphanumeric list. It shows the exact numerical values of events with their exact time positions, and the order in which the events are listed dictates the order in which they are sent from the MIDI Output.

The overall editing space occupied by the event list can be reduced to one line by dragging the horizontal dividing line upwards, or can be dedicated to the list by switching off the score editor.

The "event list's graphic display" shows each event as a horizontal beam, allowing quick recognition of chords and doubled-up notes, and a quick overview over each event's relative position within the bar.

"Score editor": displays notes as conventional notation.

1. Overview

Event Editor

2. Accessing and quitting the editors; keystroke commands

| E |

| Shift | J |

| Return |

| 0 |

| Enter |

| . |

| * |

| O |
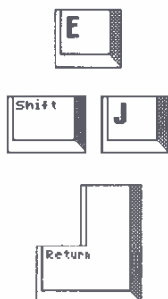
To enter a selected track's event editor click the "EDIT" icon or press 'E'.

When entering from an empty/uninitialized track, a "dialog box" will ask you to confirm that you wish to enter. It also gives you the option of clicking "No Message" which suppresses this dialog box for the rest of your working day. 'Shift-J' restores the dialog box to normal.

To leave the event editor click "OK" or the Atari "close window" box at the top left of the screen, or press 'E' or 'Return'.

The dividing line between the event list and the score editor can be dragged up or down with the mouse pointer.

Whilst in the event editor, the

Start	'0'
Stop	'Enter'
Pause/Continue	'.'
Record	'*'

functions remain as on the main page.

The 'O' key solos the current track as on the main page.

G' switches the event list's graphic display on/off, 'N' opens/closes the score editor.

There are many other keystrokes available in the event editor — look in the event editor Keychart, Chapter 21: "APPENDIX", section 5.

To edit an event, the event must first be found. There are many ways to do so.

The event list "cursor" is a black rectangle whose location dictates which values will be edited.

1   1   1   1   NOTE   1   E3   ▆▆ 64   1   47

        Cursor

The cursor can be positioned as follows:

— Screen cursor arrows up/down using either mouse button
— Computer cursor keys
— CUE icon, click and hold with either mouse button
— "Catch" mode, automatic
— Clicking a note or object in the score editor
— Dragging the "Atari GEM scroll box" along the righthand edge of the screen
— Clicking in the speckled bar of this "Atari GEM scroll bar"
— Using keystrokes 'Clr Home' or 'Shift-Clr Home' to jump to the start/end of the events.

Where the search involves going to areas which are not on the screen, the event list will scroll: the cursor remains visible at all times, *and the event which is highlighted by it will play via MIDI.*
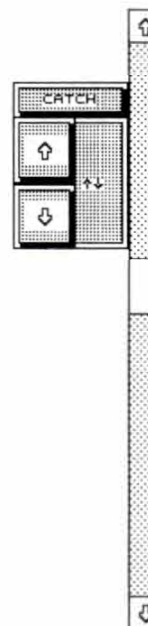
3. Event list positioning

3.1 Screen arrows and cursor keys

The screen cursor arrows and computer cursor keys up/down will position the cursor in the current track and any movement of the cursor among the track's events will be heard via MIDI.

It is also possible to right-click either cursor arrow, which will reverse the direction of scroll (useful when the event list is reduced to one line and only the top of the up screen cursor arrow is showing!). Clicking and holding the arrows will give a continuous scrolling. Using both mouse buttons on the arrows will make the event list jump in steps without playing via MIDI.

3.2 CUE play with tempo control
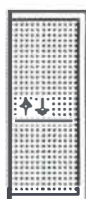
One of the easiest ways to find an event for editing is by running the mouse pointer back and forth over the CUE icon, *keeping the left mouse button depressed*. This is a "super" version of using the screen arrows to step through events, and you hear the events of the current track only.

Clicking and holding the "CUE" icon with the right mouse button starts the sequencer from the current event's time position; as soon as the button is released, the sequencer stops. At the same time, the tempo can be decreased or increased by sliding the mouse backwards or forwards; the tempo returns to its original setting when you release the mouse button.

This plays the whole song, not just the current track (to hear just the current track playing in realtime, press 'O' to solo the track). In this respect CUE is a very convenient version of the usual START/STOP commands.

So long as one of the mouse buttons is kept depressed, the mouse pointer can be allowed to stray from the CUE icon.

The CUE icon could become one of your most-used methods of seeking out events: scroll to roughly where you wish to hear the track with the left button on CUE, change over to holding CUE with the right button and move the mouse towards you to slow the music down for greater ability to pinpoint the problem event etc.

Tip: there is a difference between "CUE" and the standard "Pause/Continue" transport control:

— "CUE" (right-hold the CUE icon) starts/stops the sequence from the *current (cursored) event.* Keystroke: '#' (GB) or '\' (USA).
— "CONTINUE" (press '.') starts/stops the sequence from the *current Main Bar Counter position.*

3.3 CATCH mode

The CATCH mode locks the scrolling display to what is playing via MIDI: played events will be automatically followed by the editors.

Clicking the "CATCH" icon or pressing 'L' enables the CATCH mode. N●TAT●R ALPHA will cursor the event whose time position is nearest to that of the Main Bar Counter.

When you press START, this will happen automatically: NOTATOR ALPHA will display the MIDI events of this track as they are transmitted over MIDI.

The CATCH function is disabled by pressing the cursor keys or by any form of clicking in the edit area — the display will then freeze where it is (reactivate with 'L'). In the score editor, use of 'Shift-L' will freeze the score cursor (reactivate with 'L' again).

If CATCH mode is enabled while the sequencer is stopped:

— scrolling the Main Bar Counter with the mouse
— using the '[' or ']' keys with 'L' afterwards
— using the Autolocator with 'L' afterwards
— using the key next to 'Backspace' to type into the Main Bar Counter with 'L' afterwards (use this method to make large jumps)

will make the editors jump to the new position.

"First data byte" and "second data byte" values have different meanings according to the "status" of the event *(see previous chapter)*. They are always called "-1-", "ONE", "first data byte" and "-2-", "TWO", "second data byte" respectively. Channel Pressure and Program events make no use of the "second data byte".

5. Editing in the event list

All the values you can see are editable by:

— **mouse clicking (left/right)**
— **using the "'Control' + mouse" feature**
— **using the '+/-' keys**
— **direct typed entry from the calculator pad.**

Editing is possible during playback, and the sequencer will always play the most recent version.

The "CATCH" function ensures that the display follows what is played via MIDI during playback. As soon as a value is clicked or a key pressed, the display will freeze to allow editing to take place; clicking "CATCH" or pressing 'L' reactivates the "CATCH" function.

The calculator keypad allows direct entry of numerical values, eg to enter a Note's velocity of "82", ensure the cursor is on the "second data byte" and press '8' quickly followed by '2'. The '0' key is not interpreted as a Start command if it is entered after another number (eg "10"). To enter a value of "0" on its own, hold 'LeftShift' while tapping '0'.

This "calculator keypad" feature applies to every parameter of an event except for the time position; note lengths can only be entered in terms of 1/768th notes (eg 1/16th is "48"); Note pitch values are entered by giving the pitch's MIDI note number (eg C3 is value 60)(*see section 5.6 on Note length*).

5.1 Altering an event's time position

The order of events in the event list reflects the order in which they are sent via the MIDI Output (events at the top of the list are sent first).

Changing an event's time position (say, from bar 3 to bar 20) leads to an immediate "refreshing" of the event list as the event is scrolled: *the cursor will always stay with the event as it scrolls*, and the event will always stay in view — it's its relative position in the list that is changed.

Very large jumps in time are best done using the "'Control' + mouse" function as it is quicker.

Within a genuine chord (where notes share the same time pulse), the lowest-pitch note is the highest placed in the chord's event list, the next-lowest gets the second position, and so on.

5.1.1 "Pickup Clock"

In the event editor, the "slash" key '/' in the calculator keypad forces the Main Bar Counter position onto the current event at the exact time of pressing '/'.

5.1.2 Quantize single events

The time position of one event at a time can be quantized to the selected display format by pressing 'Q'.

This can allow each event to have a different quantize resolution within the track.

As with almost all the other screen displays or commands, the CATCH function never affects the timing of the sequencer (thanks to the "priority-controlled multitasking"). The opposite, in fact: when a large number of events follow each other very quickly, the screen display may lag behind; as soon as the sequencer is stopped, however, the last event to have been played is immediately cursored.

The event list cursor's position is affected by clicking a note in the score editor.

Down the righthand edge of the event editor, the white "scroll box" represents the visible portion of the event list, and the speckled bar represents the track.

Dragging the "scroll box" repositions the event list cursor.

Clicking the speckled bar above/ below the scroll box scrolls the event list "page-by-page" up/ down.

Pressing 'Clr Home' will make the event list jump to the first event of the track. 'Shift-Clr Home' makes the list jump to the last event of the track.

3.4 Clicking notes

3.5 Atari GEM scroll bar

3.6 Jump to first/last event

4. Event list's event line

The details of each event, MIDI or P_USER, are shown in the list, one line per event.

From left to right, an event is always seen as:

```
     1  1  1  1      NOTE      1 E4 82      2  0  0
     /  /  /  /      |         /  |  |      /
   Bar /  /  /    Status     /   |  |    Length (or Info)
     Beat /  /    Voice Number   |  |
  Denominator /         1. Databyte  /
         Ticks              2. Databyte
```
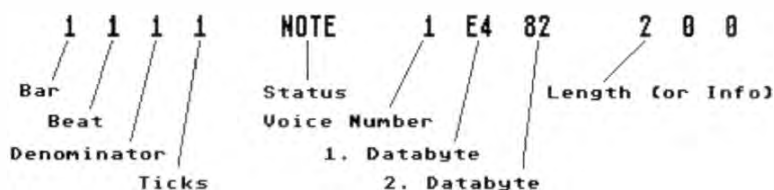
Time position:

— Bar|beat|display format unit|internal resolution pulse

Event:

— Status
— Voice
— "first data byte"
— "second data byte"

Note length (notes only) or other information:

— note length display follows the usual NOTA-TOR ALPHA "bar|beat|display format unit|internal resolution pulse" display.
— non-note events (Control, P_USER etc events) show information relating to their function.

Both the format of the display quantization (the "FORMAT" value in the information bar above), and the time signature, will have an effect on events' time positions displays in the event list.

It is not the current time position of the event that is altered (which may have been quantized previously via the QUANTIZE track parameter), but the <u>original</u> position of the event when it was first recorded.

It can, for example, make sense to quantize a track with the QUANTIZE track parameter on the main page to 1/16 and after this to "re-quantize" individual events in the event list to 1/12 to restore the precise "feel" you require.

5.1.3 Insert mode

When "Insert mode" is active ('Shift-I' keystroke), changing the time position of an event *in the event list* will correspondingly change all the subsequent events' time positions. Insert mode remains active until you leave the event editor.

To avoid unwanted changes of position, please disable Insert mode after use by quitting the event editor ('E' key). Pressing 'E' again re-enters the event editor.

Insert mode is very useful: you can, for instance, "close up" a gap in a track, or move a whole track backwards or forwards by moving its first event.

Be careful when moving an event to an earlier position, if there are events before it: if you mistakenly "overtake" these previous events and Insert mode is on, these previous events will also be moved in time.

5.2 Status
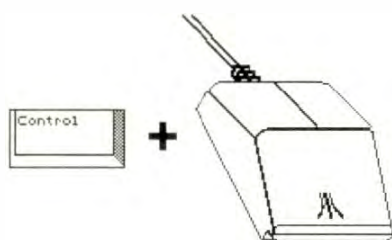
In the event list, the status of "Control", "Program", "C-Press", "P-Press" and "PitchWheel" events can be altered by double-clicking the status name or using the "'Control' + mouse" function.

The two types of event that define the end of a note ("NOTEOFF" and "NOTE with Velocity off") need seldom to be seen in the event list: their display is therefore normally left switched off in the event filter.

Their Voice numbers are automatically changed if you change the Note On's Voice, their pitches change with those of the Notes' and their time positions are automatically changed when you alter a Note's length.

However, when their display in the list is enabled, double-clicking one type of Note Off event converts it into the other type.

5.3 Voice

This column only means something when used in conjunction with the display of Polyphony. Here, you can find out and change a note's Voice assignment *(see Chapter 11: "SCORE DISPLAY", Section 22.4.1 ff)*.

If the notes were entered via a MIDI instrument, values 1 to 4 correspond to the instrument's transmit Channel. If any transmit Channel other than 1 to 4 is used, it will be displayed as Voice 1.

In "Record-Cycle" mode, events of the first four layers can be distinguished in the VOICE column.

However, the Voice value has no meaning for the MIDI output, since it is the CHANNEL track play parameter on the main page that determines which Channel the data is being transmitted on.

This event list column is where you alter "first data byte" values:

NOTE:	pitch
Control:	number
	(information column displays its name)
P_USER:	number
	(information column displays its name)
C-Press:	amount
P-Press:	pitch
Program:	number
PitchWh:	amount (value ignored by most synths)
SysExcl:	manufacturer ID
	(info column may show IMA name)

5.4 "First data byte" (-1-)

This event list column is where you alter "second data byte" values:

NOTE:	velocity
Control:	amount
P_USER:	amount/value
C-Press:	(not used)
P-Press:	amount
Program:	(not used)
PitchWh:	amount (this is the value normally used)
SysExcl:	manufacturer Device Number

5.5 "Second data byte" (-2-)

This event list column is where you may alter note lengths (this automatically moves the Note Off position).

Note lengths can be typed in via the calculator keypad in pulse units, according to the overall sequencer internal resolution.

5.6 Note length

Conversion table of 1/768 pulses to bar, beats etc:

Note length:	1/1	1/2	1/4	1/8	1/12	1/16	1/24	1/32
Pulses (768):	768	384	192	96	64	48	32	24

6. Deleting single events
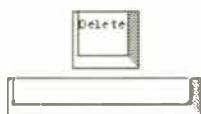
Where you try to increase the length of a note, and the program detects another note of the same pitch and channel after it, you will not be able to increase the length of the earlier note beyond the start of the second note.

In the event list, pressing 'Delete' will mark the cursored event as having been "deleted": using the 'Spacebar' or quitting the event editor will clear it from the list. This helps speed up the deleting process.

Alternatively, you can drag the event (cursor on STATUS column) to the left edge of the event editor and release the mouse button.

7. Copying single events

A single event can be copied within the event list by dragging it up or down (use the STATUS column to drag it) and releasing it.

8. Entering events from the event list filter
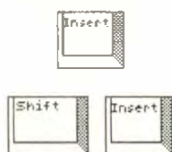
An event can be introduced into the event list by dragging the relevant icon from the event list filter at the left of the list and releasing it in the list area.

Releasing the event exactly on top of an existing one will place it at precisely the same time position.

The 'Insert' key will introduce a Control event into the list (which can then be double-clicked to change it to another status), and 'Shift-Insert' will enter a note.

The 'Esc' key in the event editor will enter an independent P_USER 60 event in the track and open a text-entry window for you to type in your text. Pressing 'Esc' or clicking the event when the event list cursor is already on a P-USER 60 event allows you to access that text for editing.

text...							OK
BOLD	UNDER	ITALIC	LIGHT	OUTLINED	SMALL	anywhere	

Entering the TEXT or LYRIC icon into the score editor has the same effect.

The following keys control text input:

'Return':   ends inputting of text

Cursor keys: control movement of cursor

'Esc':   deletes all characters

'Delete':   deletes character under cursor

'Backspace':   deletes character to the left of cursor

'Insert':   inserts space under cursor.

As the text events are part of the event list, you have the makings of an "auto-scrolling text". When the event list scrolls in playback mode (if necessary click "CATCH"), your text will scroll too.
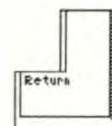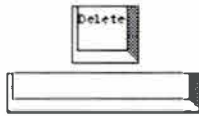
There are several possibilities to delete text:

— Press 'Delete' then 'Spacebar'

or
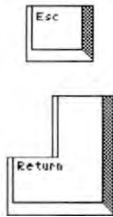
— press 'Esc' to open the text window, 'Esc' again
to wipe the text then 'Return'

or

— drag the text itself to the edge of the score editor

or

— select the text and press 'Backspace'.

Events in the event list can be selectively hidden from view.

The box of icons to the left of the event list does two jobs: it acts as a source of single events, as we have seen. It also acts as a display filter for the event list: by clicking the icons, you can decide for each status type whether it should be displayed (normal typeface) or hidden fron view (grey typeface). This means being able to have a clear overview over the track's contents.

The display filter controls only what you see on the screen — event types not displayed are still transmitted over MIDI and are *not* deleted.

The display of the event list can be freely selected. If you require for example a pure "note list", disable all the icons with the exception of the Note On one. Other possibilities are for example a pure "Pitchbend" list, a pure "Channel Pressure" list or any combinations you can think of.

As you change the display filter configuration, the event under the cursor will always remain visible, even if the event is one that should become filtered: this avoids the cursor jumping in time to the next event, and the event anyway disappears next time you scroll the event list.

10. Event list display filter

11. Event list's graphic display
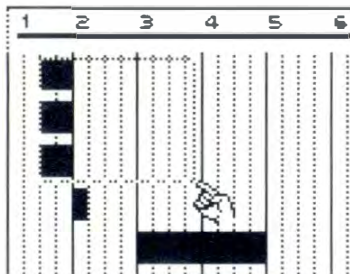
To the left of the event list, each event in the list is represented as a horizontal black beam sharing the same line as its event; each event is on a separate line.

The background is a time grid, whose lefthand edge is the beginning of the bar. The solid vertical lines represent the beats within the bar, numbered above. The grid shows up to six beats from left to right. The beat lines depend on the metric signature.

The dotted vertical lines represent the "display format" (in NOTATOR ALPHA, each beat is normally split into 4 1/16ths, though this can be changed in the FORMAT box in the information bar above); where the display format is 1/24 or higher, the dotted lines represent whole fractions.

The left end of an event beam shows the point in time, within the bar, of the event's beginning: the exact position is displayed in the event list, right.

The graphic display's job is to show, at-a-glance, events' relative positions within a bar.

The length of an event beam represents a note's length (non-note events have no length as such, and are portrayed as short "blips" on the matrix). Because it is not really the graphic display's job to show relative lengths, some notes' lengths will disappear beyond the righthand border: their exact lengths are displayed in the event list to the right.

One "Pixel" dot on the screen represents a 1/96th note.

The event list graphic display is a great way of spotting chords and mistakes such as doubled notes.

Although you are able to directly edit the time position of an event by dragging the graphic beam left or right, this graphic display is more suited to giving you a visual feed back of the information in the event list to the right.

If you want to use the graphic display for editing, you can change a note's length (non-note events have no "length") by dragging the graphic beam left or right (keep the left mouse button depressed at the beam's lower right corner — pointer changes to a finger).

To change an event's time position within the bar, click-hold the beam itself (pointer changes to a hand) and drag the beam left or right.

In a chord, after click-holding the top beam's lower righthand corner, the mouse pointer can be dragged downwards to include the other notes in the "lasso", and left or right to increase/decrease the length: when you release the mouse, the selected note length will be copied onto the following notes without altering those notes' time positions. This "length copy" feature is designed to help give notes in a chord the same length.

Event Editor

12. MIDI Step Input

Edit

✓ MIDI Step Input

Tab

When "MIDI Step Input" in the "Edit" menu is selected, you can use your MIDI master keyboard to enter notes into a track's event editor step-by-step while the sequencer is stopped, without being in record mode, and therefore without metronome. Notes can be entered singly or as chords; only when the last key of a chord is released will the program step forwards.

'Tab' acts as an "empty step" or "rest" command: it steps the sequence on by one note value.

MIDI Step Input is useful in many situations (such as entering "unplayable" runs etc).

The time positions of notes depend on the selected note in the lefthand partbox.

Example:

— enter your first note. Ensure it is where you want it. If not, scroll its time position with the mouse.
— Continue inputting notes, choosing their values in the partbox. 'Tab' will adopt a step length equivalent to the selected note in the partbox.
— If at any point you need to correct a note or go back and add a second line, always *click the note on the stave nearest to where you wish to continue from*, then press 'Tab' or continue inputting. This ensures the sequencer knows where it is starting from.

Task: at the beginning of bar 4, the synthesizer is to switch to Program number 27.

Solution 1: to achieve this, a MIDI Program Change command must be inserted into the event list. First click the desired track of the pattern and then click "EDIT" — the event editor will appear.

Use the mouse to drag an event from the PROGRAM icon of the event list filter to the event list. This has the effect of inserting a new event with a Program status. Select the position and number in the "-1-" column.

The line in the Event Editor should read eg:

"4 1 1 1 Program   27".

Solution 2: in record mode, you can record Program Change events that arrive from your MIDI devices; once in a track, you can edit the number and time position in the event list.

Tip: the program number corresponds exactly with the synthesizer's displayed number only if the synthesizer's Program numbering system starts with Program 00.

Event Editor

Task: all three notes of a chord should receive the same new length.

```
2 1 1 1  Note 1  G 3     88  1  2  8
2 1 1 1  Note 1  C 4     92  1  2  8
2 1 1 1  Note 1  E 4    104  1  2  8
```

Solution: in the event list's graphic display, click-hold the lower righthand corner of the top note's beam; drag it downwards to cover the other two notes (and right or leftwards to increase/decrease the length); release the mouse button.

Task: when you copied a segment of a track, you missed the "Pedal Off" event (Controller 64, value 0) so that all the notes sustain on.

Solution: drag a Controller out from the CONTROL icon, left of the event list. Select the position, and scroll the "first data byte" to 64, the "second data byte" to 0.

You can also drag in the "Pedal Off" symbol and place it where you want it under the stave.

Use the same method to correct other problems, such as inserting or moving a "Pitch Wheel Off" event to bring a synth back to the right pitch at the desired place, for example:

```
5 1 1 1  PitchWh  0 64
```

(The "second data byte" is the one usually used: 64 is resting, 0 is lower, 127 is higher.)

1. The basics

NOTATOR ALPHA's notation is based around its ability to directly convert MIDI notes into conventional score. The score always shows the events of the current track. Edits you make to the score with the mouse are as instant as if you were editing the event list itself.

You do not have to imagine what is happening to a note while editing: you simply grab the note itself and transpose, move, copy or delete it directly, while simultaneously hearing the result via MIDI.

The notation can be altered by various <u>display parameters.</u> These include the "display format", clef, key signature, double-stave split point etc. Most display parameters affect the track as a whole. There are also many functions that allow changes to the display of individual notes.

The score editor includes various graphic symbols that can be freely entered and manipulated along with a track's MIDI events. Some of these can actually affect the MIDI data (eg Pedal signs). Comprehensive Text and Lyric functions allow text to be entered where desired.

Clicking the "EDIT" icon on NOTATOR AL-PHA's main page (or pressing 'E') makes the event editor appear; this contains various editing tools including the score editor.

The score editor is situated below the event list with its graphic display, and includes the "lefthand partbox" of symbols. The score editor can be switched off/on with the 'N' key or via "Note Display" in the "Edit" menu.

2. Switching on the score edit

3. Dividing the screen

The dividing borderline between the event list and score editor can be freely moved: drag the border-line itself up or down to the required position.
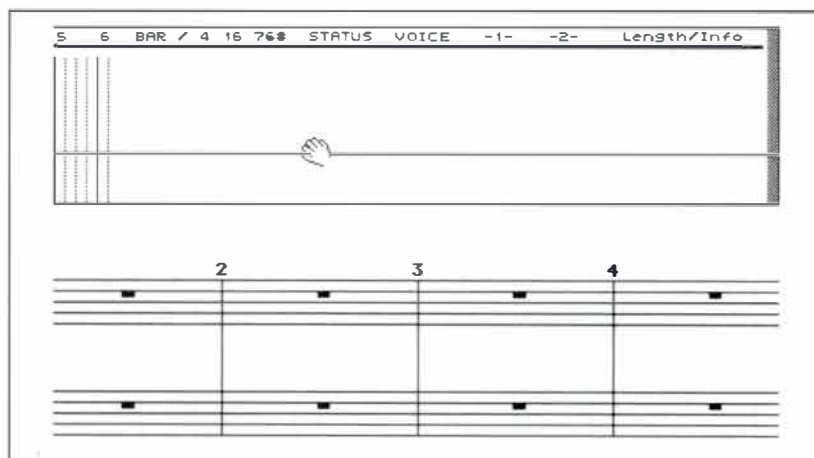
The event list display can be reduced to a minimum of one line so that you are at least able to see the event values of the selected score object.

An "object" is anything in the score editor: note, symbol, text etc.
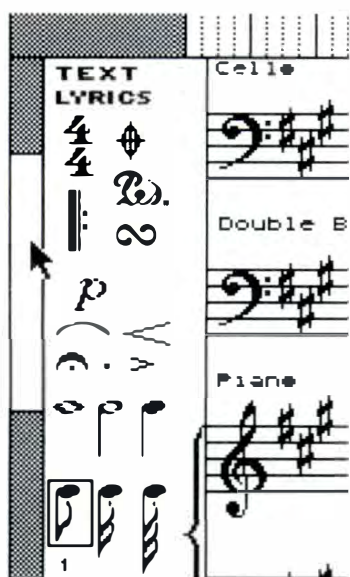
If the score editor part of the event editor is not big enough (eg in "Full Score" mode) a "scroll bar" will appear down the lefthand edge of the score editor, with which the score can be scrolled vertically.

Dragging the white "scroll box" in this scroll bar with the right mouse button will have the effect of updating the display only when you release the mouse button. Dragging the scroll box with the left mouse button allows you to see the staves scroll, complete with their track names and clefs.

The score editor will always show "where the action is". Whether you use the mouse, use the "CATCH" or "CUE" functions or the scrollbar down the righthand edge of the screen to select an event, the score editor will update to reflect the new position. And vice-versa, clicking a score object will move the event list.

The bracket keys in the calculator keypad move the score display bar-by-bar without affecting the Main Bar Counter or event list. Pressing 'Shift' at the same time moves the score in beat steps, and pressing 'Alternate' at the same time moves the display in "display format" units (usually 1/16ths).

'Clr Home' makes the event editor jump to the first event in the track, 'Shift-Clr Home' to the last event.

4. Positioning within the score editor
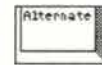
5. Entering objects into the score editor

There are two "partboxes" at your disposal, containing the objects you can enter with the mouse onto the stave.

Whenever you enter an object, the "Control Line" will appear above the score editor giving the exact data of the object you are entering.

5.1 Entering from the lefthand partbox

The lefthand partbox is always visible to the left of the score editor. It contains a selection of the most commonly-used objects.

The objects are grouped in "families", each family showing one object at a time; the other objects are selectable by clicking the visible object.
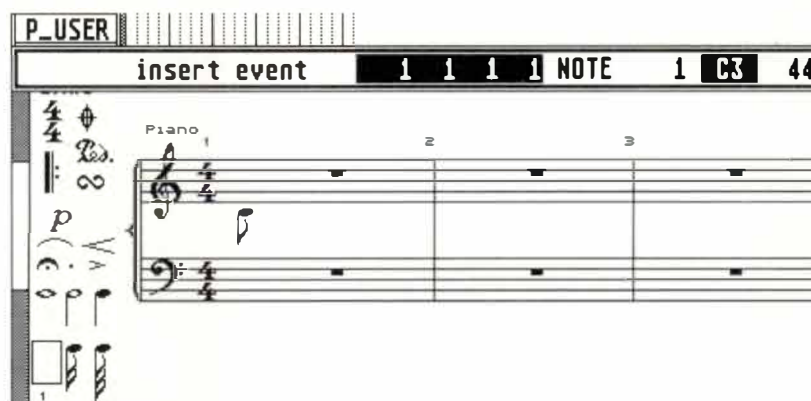
To enter an object, drag it from the partbox with the left mouse button onto the stave and release where desired.

Fast insertion: if the desired partbox object is already selected (surrounded by a frame), clicking and holding the right mouse button will make the object fly to wherever the mouse pointer is, allowing you to quickly enter notes etc without having to move the mouse pointer to the partbox each time.

The large pop-up partbox is opened by touching
the bottom edge of the screen with the mouse
pointer. It contains all the score objects, simulta-
neously visible.
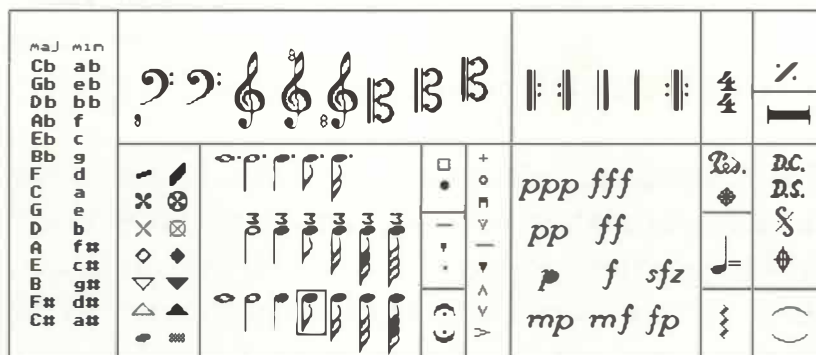
To leave the partbox without selecting anything,
just touch the bottom edge of the screen with the
mouse pointer again or move the pointer outside
the partbox.

To select an object from the pop-up partbox, click-
hold it with either mouse button: the partbox van-
ishes, and the object can then be entered onto the
stave.

At the same time, the selected object will be loaded
into the lefthand partbox to indicate that all sub-
sequent right-clicks will continue to enter the same
object, until a fresh one is selected. This is so, even if
the current display is such that you cannot actually
see all of the lefthand partbox.

**5.3 Disabling the
pop-up partbox**

The automatic "pop-up" action of this partbox can be
disabled by right-clicking the bottom edge of the
screen: the partbox will now appear only when you
left-click the bottom edge of the screen. Right-click-
ing the bottom edge of the screen again will re-enable
the automatic pop-up action of the partbox.

5.4 "SNAP" function

While entering an object from either partbox, you are able to select a special mode that "SNAPS" objects into particular time, pitch or page positions.

"SNAP" can be turned on and off by additionally clicking the other mouse button while the first one is being held, while entering an object.

There are three uses to which SNAP is put in the score editor. When you enter an object, NOTATOR ALPHA defaults to the last mode (SNAP on or off) that you used (watch out for the word "SNAP" in the Control Line — if it is not there, SNAP is off).

Time SNAP: the object may only be entered into a time position at which there is already a note or rest (this also depends on the value of the note being entered).

This helps you to enter notes more quickly and with greater precision than in the standard mode, which allows you to enter notes almost anywhere.

Diatonic SNAP (notes only): in addition to Time SNAP, SNAP will also only allow the note to be entered at the note pitches of the current key signature.

This also speeds up the entry of notes onto the stave since chromatic notes are suppressed. Disabling SNAP allows full access to every semitone.

Text/Lyric SNAP: when entering text or lyric events, SNAP will force the event to align itself along one of the many "SNAPlines" that run, invisibly, horizontally across the screen.

They are each separated by 12 screen pixels. These SNAPlines ensure that all text/lyric events are aligned even if you continue a line of lyrics on from the end of an existing line, or that any additional lines (eg of a verse) are regularly spaced down the page.

SNAP is vital with lyrics and should always be used. When continuing on from an existing line, simply enable SNAP and release the Lyric icon at the approximate height of the existing lyrics under the next note: SNAP ensures that the exact alignment is kept. When starting the second line of a verse, enable SNAP and release the Lyric icon approximately the height of one character below the existing one: SNAP ensures the distance between the lines is correct.

```
SNAP   insert event   1  1  3  1 NOTE  1 G2  68      1 94
```

5.5 The "Control Line"

More information on what you can expect to see in the "Control Line" is given in the appropriate sections in the manual. This is a summary.

Whenever an object is entered onto the stave, or is moved once it is on the stave, a boxed line of informative text appears above the score editor, telling you what is happening: the "Control Line".

— When entering an object, it gives you a time position readout of where the mouse pointer is, with the "event list" line relating to the object you are entering: if a note, the pitch readout is also given; the note length is set by the note value you have selected minus one pulse; the Voice number of the object, where applicable, can be preset by altering the tiny number in the bottom lefthand corner of the score editor.

— When deleting, the Control Line will confirm the deletion when the mouse pointer has reached the score editor border, and give the number of objects being deleted.

— When manipulating objects already on the score, you are told the direction of the mouse pointer (transposing or moving in time), with the latest pointer position and the amount of offset from the original position.

— Other objects, such as slurs and crescendo "hairpins", give information on amount of bend, opening angle etc while you move the mouse.

— Dragging the stave, lower printing limit and header printing limit up and down tells you where you are in screen pixels, and <u>how many lines you are allowing per printed page by moving these items.</u>

6. Manipulating objects in the score editor
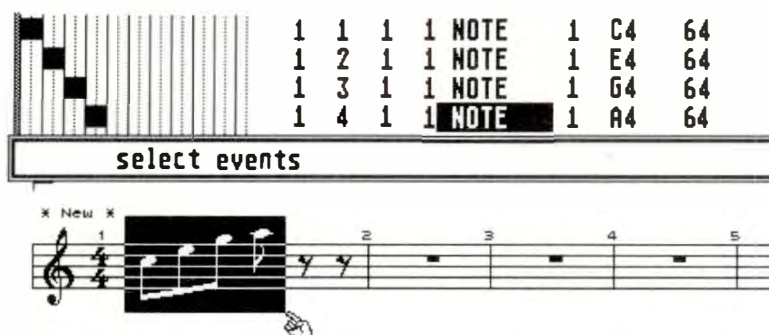
The score editor has a large number of functions for editing the display of objects. The most common operations involving transposing, moving, copying and deleting can be done with the mouse. Many of the display functions are accessible via keystroke commands.

6.1 Selecting objects

Most operations with the mouse involve "selecting" the objects first before manipulating them. "Selected" objects blink.

There are many ways of selecting objects:

— individual objects may be selected simply by clicking with the mouse: this deselects all other objects.

— holding 'Shift' at the same time as clicking objects allows you to select or deselect a number of them without affecting the objects you leave alone.

— "lassoing" a group (eg a chord or bar) of objects
selects them: click-hold in a blank space near the
required objects, keep the left button depressed
and move the mouse in any direction so as to form
a rectangular shaded box around the required ob-
jects, which will start to blink when the mouse
button is released. All other objects will be de-se-
lected. Keeping 'Shift' depressed will keep any al-
ready-selected objects in a selected state.

"Lassoing" with the right mouse button with
'Shift' depressed de-selects the enclosed objects.

— individual objects may also be selected in the
score editor by using the cursor keys, clicking an
event in the event list or making use of the CUE
or CATCH functions. The score editor will update
its display to reflect the event's time position.

6.2 Moving objects

To move individual objects in the score editor, place the mouse pointer on top of the object (on notes, the notehead) and press the left mouse button: the pointer changes into a pointing finger. The object will be selected and will move with the mouse until you release the mouse button.

To move a group of objects, they must first be selected (see above), so that they all blink together: moving one selected object will move all the other objects simultaneously.

6.3 Copying objects

Moving objects, then pressing 'Shift' while releasing the mouse button allows you to copy the objects to a new destination. The original objects remain where they were. In Full Score mode, objects may even be copied from one track to another.

Objects can be deleted by moving them in any direction to the borders of the score editor. Confirmation of the deletion will appear in the Control Line as will the number of objects deleted.

Where a group of objects are involved, it is the position of the object being moved by the mouse that dictates when the deletion takes place.

All the symbols which are "extensions" of notes (fermata, accents etc) will be simultaneously deleted.

'Backspace' also deletes the selected objects.

As well as displaying one track's stave or double-stave, NOTATOR ALPHA allows the simultaneous display of up to 8 tracks' staves, each of which can be a double stave: this is the "full score" mode. Select "Full Score" in the "Edit" menu or press 'U'.

7. Single track and full score mode

In full score mode, the staves of the current pattern are shown one on top of another. The order of the score's staves corresponds to the order of the track numbers. In full score mode, all the displayed staves can be simultaneously edited.

A maximum of 8 tracks can be shown in full Score mode at any one time. If a pattern contains more than 8 recorded tracks, only the top 8 will be displayed.

For these eight tracks, any combination of single and double staves is allowed.

Tracks that are "hidden" by use of a " * " in the status column in the main page will not be displayed in the score editor nor will they be heard via MIDI.

When editing in full score mode, bear the following in mind:

— Although full score mode can show the staves of several tracks at the same time, the event list shows the events of one track at a time. The name of this "current" track appears in the top left corner of the event editor.
— The current track is determined by selecting a score object in a stave, or by giving a short click in an empty part of a stave: the event list will then show that track's events.
— Any event-altering functions used during full score mode (eg "Double Speed" or "Half Speed") will affect the current track: make a habit of looking out for the current track's name at the top left.
— When entering objects, the stave where the mouse pointer is becomes the current track. If the mouse is moved from stave to stave before the object is released, you will hear the different MIDI instruments reacting.

You have already read about the MIDI sequencing possibilities in the manual. In NOTATOR ALPHA, notes can also be entered directly onto the stave.

1/1 to 1/32 notes, together with their dotted and triplet equivalents, can be selected manually using the mouse. The straight, triplet and dotted forms of the notes are grouped by note value in the lefthand partbox, or are all immediately visible in the pop-up partbox.

Selecting a note value determines the step/rest value in the MIDI Step Input function.

The '1' to '6' keys in the typewriter keypad provide a neat way of selecting the note values prior to Step Input or mouse-entering: press each key again to get the different straight, dotted and triplet forms.

The velocity of notes entered via MIDI Step Input or the mouse will default to that of the last velocity value selected: enter a note, change its velocity to that desired, and from now on all the velocities will be the same until you change again.

"Partbox Voice number": the Voice number of notes and user-rests being entered with the mouse or via Step Input can be selected by clicking the little number in the bottom lefthand corner of the screen, or press 'Shift' with one of the typewriter pad number keys.

1. Entering notes
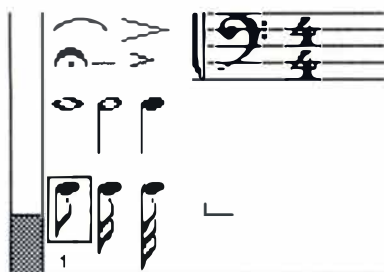
The partbox Voice number is useful in Polyphonic Mode *(see section 22).*

The length of a note already on the stave is altered by changing its MIDI length in the event list *(see Chapter 9.5.6).* The resulting display will be affected by the current display format and the Interpretation mode *(see Chapter 11.8).*

Triplet tips: NOTATOR ALPHA will recognize and automatically display triplets that you have recorded in a track, provided that they were reasonably-accurately played. You can also enter triplet groupings directly onto the stave with the mouse. Here is a way to ensure success: select the desired triplet value in either partbox and enter the first note. Drag in the second note on top of the first one, and without releasing the button, slide the note to the right until the Control Line displays the next timing step: release the button. Repeat for the third note, dragging it in over the second note. Done!

Moving notes around the screen will, depending on the direction of movement, transpose and/or move them in time.

During the moving, the Control Line will give the transposition and the time-movement offsets, together with the current pitch and time position of the moving note.
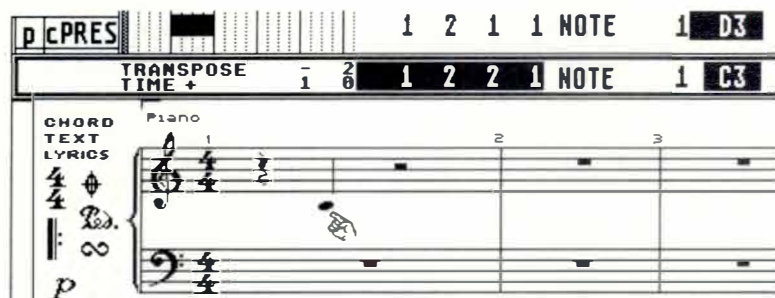
To make editing easier, movement can be restricted to a horizontal *or* vertical plane by giving a right-click while holding the note or other object with the left mouse button: this selects between vertical (transposition) and horizontal (time) movement. Clicking again selects the other option. The Control Line tells you what you have selected.

Tip: if you get lost and want to start again, clicking the right mouse button twice will restore the object to its original position.

3. Copying notes

Dragging notes while keeping 'Shift' depressed allows you to copy (or duplicate) them to a new destination. The original notes remain unchanged.

In full score mode, notes may even be copied between tracks.

The Control Line will say "COPY".

While copying, you can select just one direction of movement (see above) with a right-click.

Moving a note left or right while holding 'Alternate' allows you to adjust its <u>horizontal</u> position by a small amount <u>without affecting its MIDI time position.</u> An additional right-click restores the note to its starting point if you get lost.

4. "Graphical microshifting" of notes
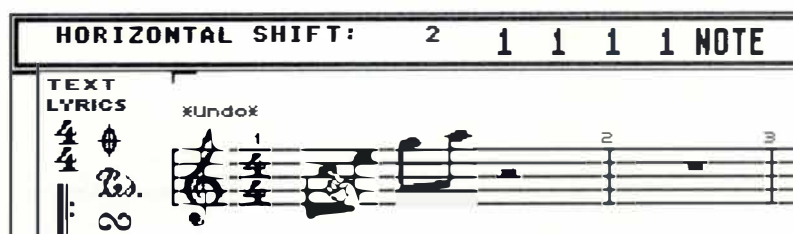
Cancelling "Graphical microshift": a note can be restored to its original position afterwards by holding 'Alternate' and clicking it with both mouse buttons at the same time.

NOTATOR ALPHA has a whole range of parameters which influence the display of notation without affecting the actual MIDI events themselves. Most of these work on a per-track basis, some affect the whole song.

5. Parameters that affect the display

Here is a short description of the two windows used to enter values, with a detailed description of the parameters afterwards.

5.1 Parameter Mode window

This window is accessed via "Parameter Mode" in the "Edit" menu or by pressing 'X': it displays all the important parameters of the current track in a window that opens up over the top of event editor.

The event editor and score editor remain active so that you can check the effect of the various display parameters as you work.

Close the window via "EXIT" or pressing 'Return'.

5.2 Global Score Parameters window

This window is accessed via "Global Score Parameters" in the "Edit" menu or by pressing 'Shift X': it displays global parameters that affect the whole song in a window that opens up over the top of event editor.

The event editor and score editor remain active so that you can check the effect of the various display parameters as you work.

Close the window via "EXIT" or pressing 'Return'.

Each track in a pattern can be displayed as a single or a double stave by pressing 'S'.

The notes' pitches determine whether they are shown as belonging to the lefthand or righthand stave.

The pitch at which the change occurs is called the "split point", which defaults to C3, the top note of the lower stave.

The split point is changed by left-clicking and holding the area just below the upper stave's clef and sliding the mouse backwards or forwards, watching the Control Line display.

Clicking the right mouse button while holding the left cancels the change and reverts the split point back to C3.
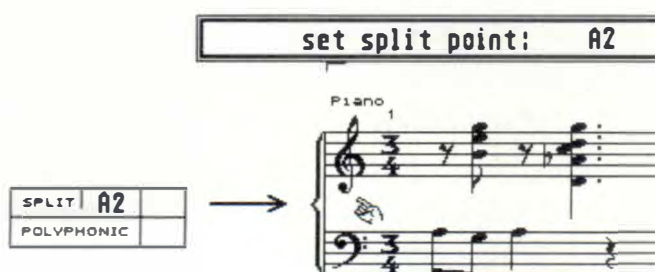
As this fixed split point cannot deal with overlapping left and right hands, you need to use the "flexible split point" feature of the Polyphonic mode *(see this Chapter, section 22.5.2)*.

The split mode and split point are settable in both the Parameter mode and Display Parameters windows.

6. Double stave (piano stave)

S

Score Display

7. Distance between staves

In Full Score mode, the distance between staves is freely alterable by clicking and holding a stave by its clef symbol, then dragging it up or down.
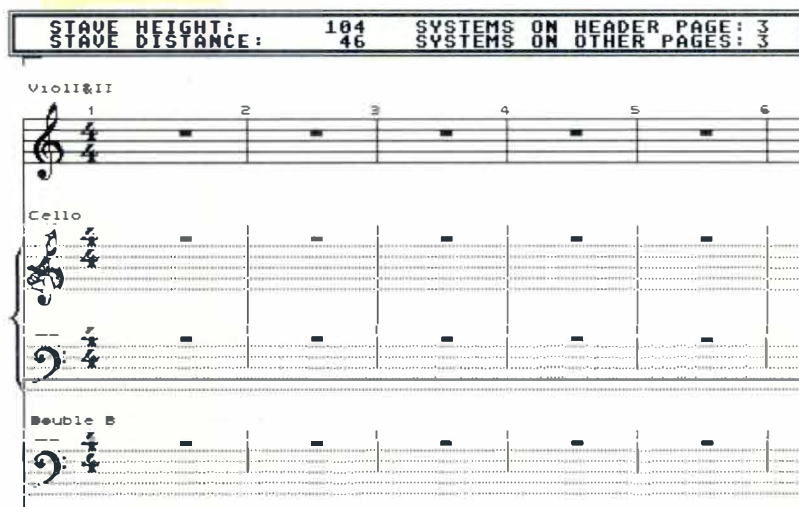
Dragging the stave with the left mouse button will cause all the staves below it to move as well, so that you only change the distance between the dragged stave and the one above it. Dragging the stave with the right mouse button will move that stave only, independently of the others.

The Control Line will display, on the left, the position of the stave in the score, as well as its distance from the stave above. The values are screen pixels.

The Control Line also shows how many staves or systems you will be printing on the first/subsequent sides (*see Chapter 14: "SCORE PRINTOUT"*).

To alter the distance between *printed systems, or between each printed line of a single track*, you need to alter the "lower printing limit", and/or the distance between the stave and the score editor top borderline (*see Chapter 14, section 2*).

8. Quantizing the display

8.1 Basic considerations

It is inevitable that any process that involves converting music, played in realtime, into score, must bring with it a certain "rounding off" of details. Notation cannot cope with the detail that the sequencer can, most notably as regards time position and note length. This is what is called "display quantization".

To produce a readable (therefore playable) output from what you have played in in realtime, NOTATOR ALPHA has a range of display parameters which correct the display of notes' time positions and lengths. These parameters affect the display *without affecting MIDI data.* These parameters idealize or "quantize" the time position and note length, so that the result you see is as close as possible to what you intended.

The basic consideration you must accept at all times is that you must attempt to play in time with the metronome: if you do not, NOTATOR ALPHA cannot guess what your intentions are and will assume you intend to display the weird notation that comes of not playing in time.

8.2 Display "format"

Each track can have its own different display quantization or "format": being display-based, this has <u>no effect on the MIDI data.</u> Choose the value in the Parameter mode window in the "QUA" box. This value gives:

— **the smallest value of note length the display will allow;**
— **the closest that notes can be to each other.**

You may select from straight, triplet or combined quantization. When a combined (eg 8-12) display quantize value is selected, NOTATOR ALPHA is capable of interpreting notes depending on how accurate your own realtime playing was; it will correctly distinguish between swung "dotted eighth and straight eighths" and full-blown triplets, again providing your own playing was accurate to the metronome.

The following display quantization is available:

Straight	triplet	combined
4	6	4-6
8	12	8-12
16	24	16-24
32	48	32-48
64	96	64-96

If the value reads "Def" (default), then the display quantization adopted is that of NOTATOR ALPHA's main display "FORMAT", seen in the Information Bar above the event list (in this FORMAT box, the straight value includes the combined one, so "1/16" means "16-24").

You cannot have more than one display quantize per track.

Notes whose timing or duration are shorter than the display quantize selected for that track will be shown as having the same value as the display quantize.

The display quantize is no longer relevant if you are "MIDI step inputting" or entering via mouse: in this case, you may find it useful to select a higher value so you can enter any value of note you choose.

8.3 Interpretation Mode

Switchable in the Parameter Mode window in the "INT" box or by pressing the 'I' key, the Interpretation mode has a special effect on the display of note lengths: basically, it strives to present you with the best readable display of your music.

As with the other display parameters, this mode has no effect on the MIDI time position of the notes, nor on the MIDI note length.

Switch Interpretation mode off when entering music with the mouse or via MIDI Step Input.

Tip: in general, the best results are obtained by switching Interpretation mode on.

8.4 Syncopation display

Syncopation is partly dealt with automatically by the program, in that it ties smaller note values when they bridge a bar's beat divisions: this type of display shows where the beat falls in the bar. An alternative form of syncopation display may be selected for individual notes.

This alternative display is achieved by selecting the note and pressing 'W' for "on" and 'Shift-W' for "off".

Example: you want the phrase "Eighth-Quarter-Eighth note" to be shown as being syncopated. When first entered, the program shows four eighth notes, the middle two being tied: this makes beat 2 of the bar "visible". To select the alternative display, select the second note and press 'W'.

Score Display

| SYNCOPATION: OFF | | SYNCOPATION: ON |
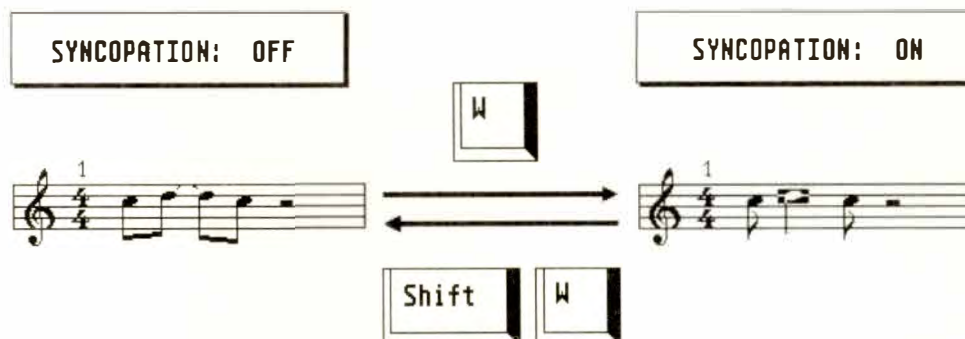
9. Rests

9.1 Automatic rest display

Rests are automatically entered by NOTATOR AL-PHA according to notes' time positions and lengths.

In Polyphonic mode, the rests of each voice are automatically displayed. The Parameter mode window allows this automatic display to be switched off altogether in the "REST" boxes, which is very useful in Polyphonic mode, although the facility remains active even when Polyphonic mode is off *(see section 22 below)*.
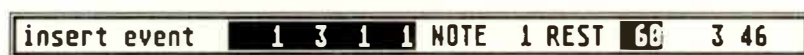
9.2 User rests

In certain special situations, you need to be able to override the automatic rest display. This is done with special "rest events" which behave like note events. They have, like notes, a Voice number which is used in Polyphonic mode.

These user rests differ from the automatic rests as follows:

— They remain visible even when the display of automatic rests is switched off.
— They can be moved vertically (important in Polyphonic mode).
— They are altered by the display quantization like notes *(see section 8)*.
— They can be "graphically microshifted" like notes *(see section 4)*.

To enter a user rest, choose its value by selecting the appropriate note value in the lefthand partbox, then press 'Alternate' while entering the "note" with the mouse in the usual way.

Alternatively, 'Alternate-R' can be used to change selected notes into user rests of the corresponding value.
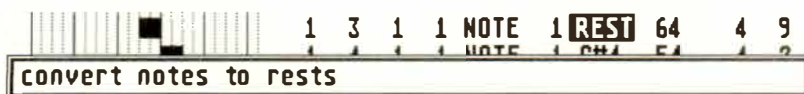
9.3 "Rests of more than one bar" symbol

When displaying a single track in the score editor (ie not in Full Score mode), strings of empty bars can be grouped together under one bar using the normal symbol:
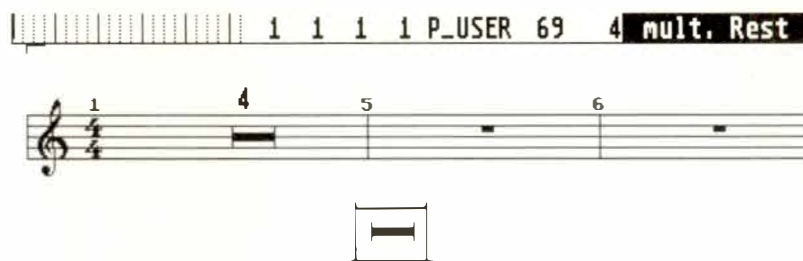
Enter the symbol from the pop-up partbox into the first empty bar, then select the number of rest bars in the symbol's P_USER 69 event's "second data byte" in the event list "-2-" column. Full Score mode will disable this function.

You will see how the event actually removes the following rest bars from the display as you scroll the number.

10. "Repeat previous bar" symbol

This symbol is used to indicate to the performer that you wish him/her to repeat the previous bar:
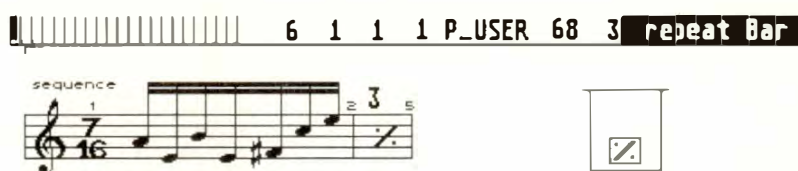
This symbol (which appears as P_USER 68 in the event list) may be entered from the pop-up partbox onto the stave. The event's "second data byte" determines the number of repeats, which appear as a number above the symbol. This will affect the display by changing the stave's bar numbers accordingly.

The symbol suppresses the display of notes in a bar, though it is your job to ensure the notes do in fact repeat the previous bar: the notes will still be heard, but the bar displays the symbol instead.

Tip: normally, the symbol will disappear from the display when you switch Full Score mode on. If you place a "1" in the event's "second data byte", the symbol will remain on in Full Score mode.

Eighth notes and shorter are automatically beamed in groups of beats.

The automatic beams can be removed (eg when you add lyrics) from a whole track by pressing 'V' or clicking the "VOCAL" box in the Parameter mode window.

11. Beaming

11.1 Automatic beaming

11.2 Vocal mode

11.3 Beaming and unbeaming
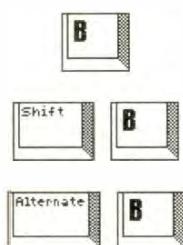
You may individually override or add to the automatic beams, even in Vocal mode.

— **To beam a group of notes together, select them first and press 'B'.**
— **To erase beams, first select the relevant notes then press 'Shift-B'.**
— **To reset the beam display according to the program's automatic setting for the selected notes, press 'Alternate-B'.**
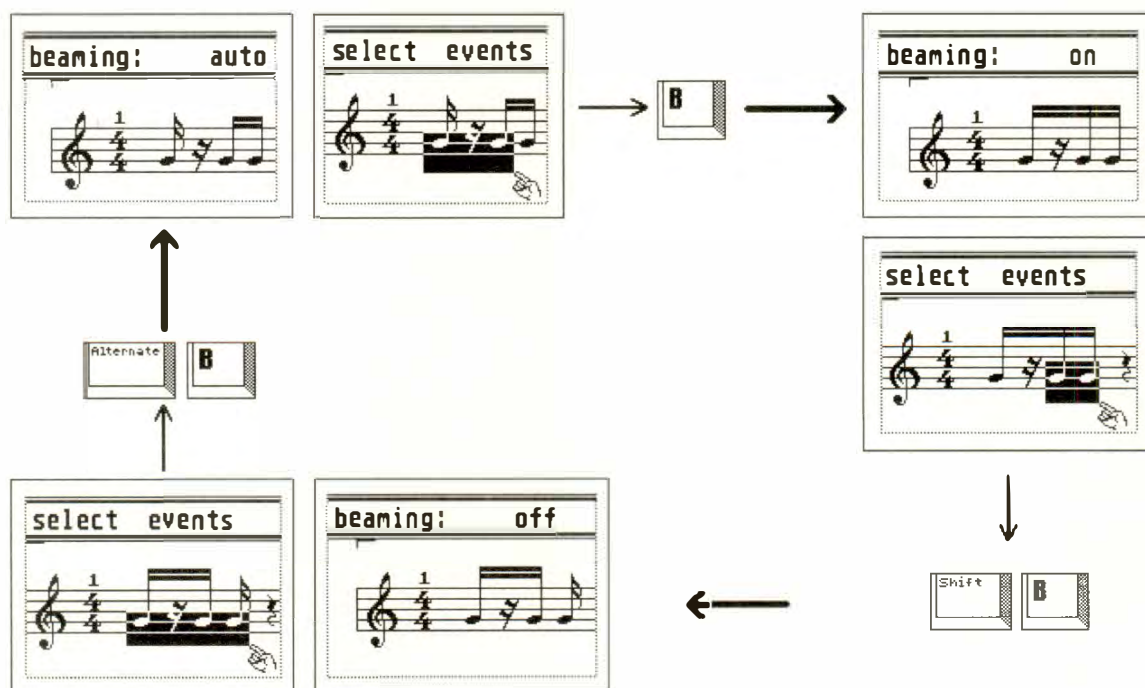
NOTATOR ALPHA displays sloping beams automatically. The height and angle of the beams depend on the pitch differences between the notes being beamed.

The Global Score Parameters window in the "Edit" menu (or press 'Shift-X') is where you edit the display of the sloping beams: changes affect the whole of the song globally.

Slanted Beamings: values range from 0 to 15. If 0 is inserted here, the beams will be horizontal; 15 allows the maximum slope.

The direction of stems is usually automatically decided by NOTATOR ALPHA. This can be overridden on a per-note or per-Polyphonic Voice basis.

12. Note stems

For special applications, noteheads can displayed (and printed) without stems.
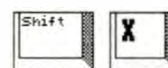
12.1 Stem parameters per stave

The "STEM" box in the Parameter mode window allows the following stem parameters to override the automatic display:

AUTO:	stem direction is determined by a note's pitch
UP:	all stems go up
DOWN:	all stems go down
HIDE:	no stems will be displayed.

12.2 Stem parameters per note

The direction of individual stems or groups of stems can be altered by selecting the desired notes and pressing 'D' for "down" or 'Shift-D' for "up". 'Alternate-D' restores the automatic stem direction to the selected note(s).
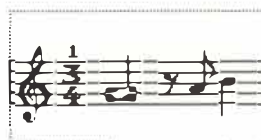
Notes connected by a beam will be handled collectively.

13. Note heads

To change the style of a note head on the screen, select the desired note head from the pop-up part-box and place the symbol on top of an existing note head in the score. You may continue entering the same selected symbol just by clicking the right mouse button without going back to the partbox, until you select a fresh object.

To give a group of notes the same note head, select them so that they flash, then drag the new note head onto one of them.

This allows individual Voices to be given their own percussion symbols within a drum part.

To return the note heads to their original form, either select the note(s) and press 'Shift-Alternate-E', or drag the "quarter note" note head back onto them.

To printout stems without note heads, give notes on the screen the grey, speckled note head. This special symbol only appears on the screen, and is not printed out.

13.1 Altering note heads
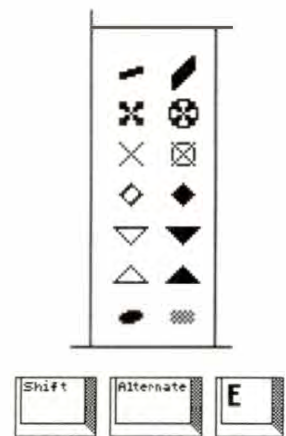
13.2 Not printing note heads

14. Clefs

There are eight clefs available:
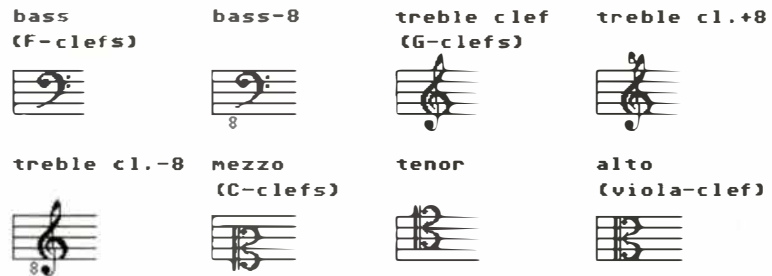
An "8" above/below the clef indicates that the notes must be played an octave higher/lower than displayed.

The clefs affect the displayed notes, but the MIDI data is not affected. Entering a clef change immediately changes the display of subsequent notes.

14.1 The basic clef

Each stave can have a different clef; each stave of a double stave can have a different clef.

A short left-click or right-click on the clef selects the stave's "basic clef".

Score Display

The basic clef may be clicked at the lefthand end of the stave, whatever bar you are at: you do not have to return to bar 1 to change it.

Tip: do not use the partbox clefs for the "basic clef".

To change the stave's "basic clef", use the clicking method described in section 14.1 above.

To introduce a different clef within a stave, enter the required one from either partbox and place it at the desired position. All the notes in this track, from this place on will be displayed correctly according to the new clef.

Clefs may be positioned anywhere where there are notes, in any bar, even within beams. Once on the stave, they can be clicked to change them.

Clefs may be deleted, like any object, by dragging them beyond the score editor or pressing 'Backspace' after selecting them.

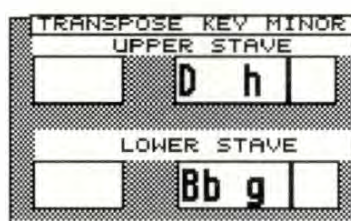## 15. Key signature

There is a range of standard key signatures available. If a note does not belong to the current key signature, it receives the correct accidental. Any note's automatic harmonic display can be overridden.

15.1 The basic key signature

Each stave can have a different key signature; each stave of a double stave can have a different key signature.

A short left-click or right-click in the area between the clef and the time signature selects the stave's "basic key signature".
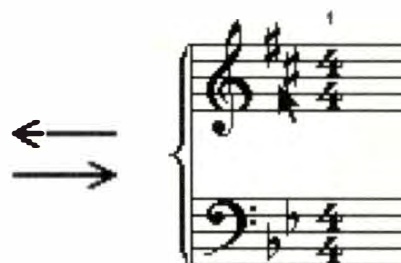
Each left or right-click changes the key signature sharp/flatwards following the "circle of fifths", starting at the default C major.

Holding 'Alternate' while clicking selects the minor scales (watch the Control Line).

The enharmonic notation of that track will change correspondingly. NOTATOR ALPHA will automatically display double sharps/flats where appropriate.

The basic key signature may be clicked at the lefthand end of the stave, whatever bar you are at: you do not have to return to bar 1 to change it.

Holding 'Shift' while clicking will apply the change of key signature to all other staves (ie a double stave or Full Score mode).

The key signature may be set in the Parameter mode and Display Parameters windows in the "KEY" box: tick the "MINOR" box to get the relative minor (always the 6th degree of the major scale).

Tip: do not use the partbox key signatures for the "basic key signature".

To change the stave's "basic key signature", use the clicking method described in section 15.1 above.

15.2 Key signature changes within the stave

To introduce a different key signature within a stave, enter the required one from the pop-up partbox and place it at the desired position. Accidentals from this place on will be displayed correctly according to the new signature.
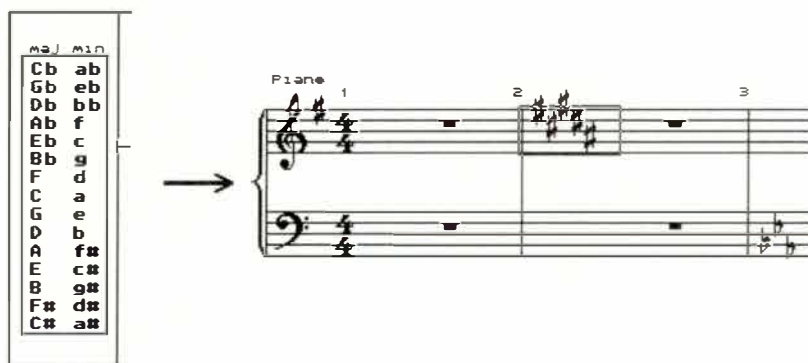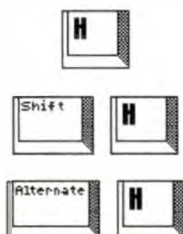

Key signatures may be positioned anywhere where there are notes, in any bar, even within beams. Once on the stave, they can be clicked to change them.

Key signatures may be deleted, like any object, by dragging them beyond the score editor or pressing 'Backspace' after selecting them.
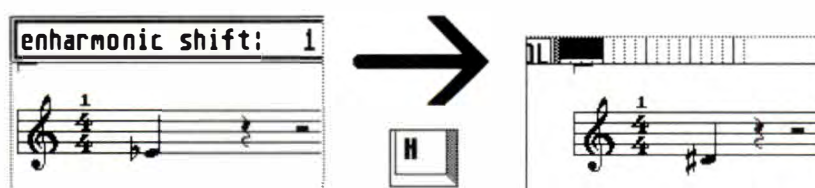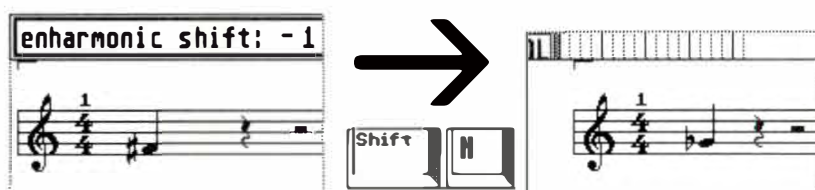
Score Display

15.3 Enharmonic shifting
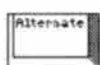
If a note does not belong to the current scale, its enharmonization is calculated automatically according to harmonic criteria. You may override the automatic choice:

To alter the harmonic display of selected notes by up to two steps, press 'H' (down) or 'Shift-H' (up). 'Alternate-H' will restore the original enharmonization.

Tip: if you find yourself having to alter the enharmonization of a lot of notes, it often helps to switch to the parallel scale (hold 'Alternate' while clicking the key signature).

There are situations where you need to re-affirm the accidentals for certain notes.

'Shift-Alternate-H' on selected notes will give each note its accidental. 'Alternate-H' restores the display to original.
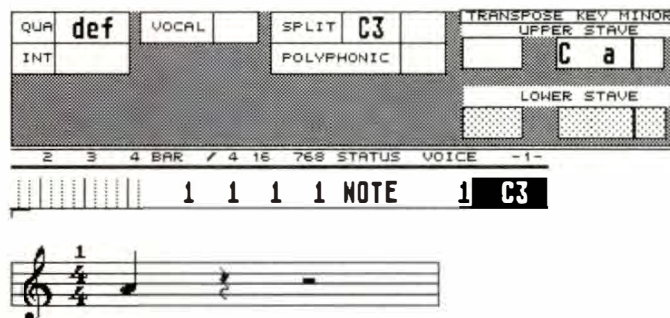
Score Display
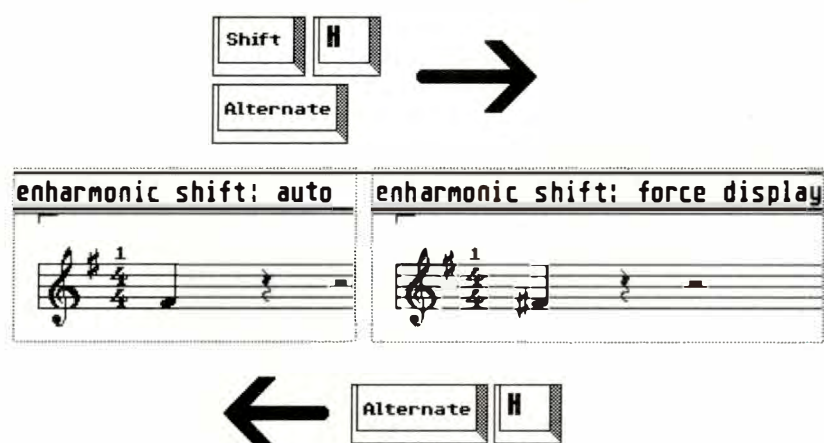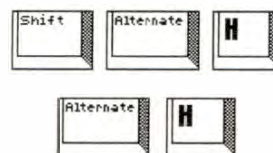
16. Display transposition

You can transpose the <u>display</u> of one or more staves <u>without affecting the MIDI data,</u> in the "TRANSPOSE" boxes of the Parameter Mode window.

This allows you to compose "from the keyboard" by selecting the correct keys for transposing instruments, without having to transpose your own playing. Each stave in a double stave can be transposed separately.

Example: to score music in F major for an alto sax, transpose the display by a sixth (+9 semitones up), then change the key signature from F major (one flat) to D major (two sharps). What you play/hear would remain unchanged, since the MIDI data is unaffected by the display transposition.

Contrast this with the "TRANSPOSE" track parameter on the main page which changes the MIDI data, but has no effect on the score (because these track parameters are "playback" parameters that affect the playback only *(see Chapter 6: "TRACKS")*.

17. Time signature

17.1 General

The time signature applies globally to the program: it "belongs" to a specific bar, *not* to a track, stave or pattern.

Please read the section on the time signature in Chapter 5: "POSITIONING", section 1.3.

A certain time signature in one bar applies to the same bar in all the tracks. When using several patterns in a song, you should only use time signatures with the arrange mode switched on.

Any change in the time signature of a bar or bars will apply to the whole NOTATOR ALPHA system. Any changes will be reflected in the relevant event list values, Main Bar Counter and of course the main time signature display in the "Information Bar".

17.2 The basic time signature

In the score editor, the "basic time signature's" nominator or denominator values can be altered at any time by a short click.

Ensure that this is done only when the stave is back at its start (press 'Clr Home', or reset the Main Bar Counter to "1 1 1 1" and click "CATCH).
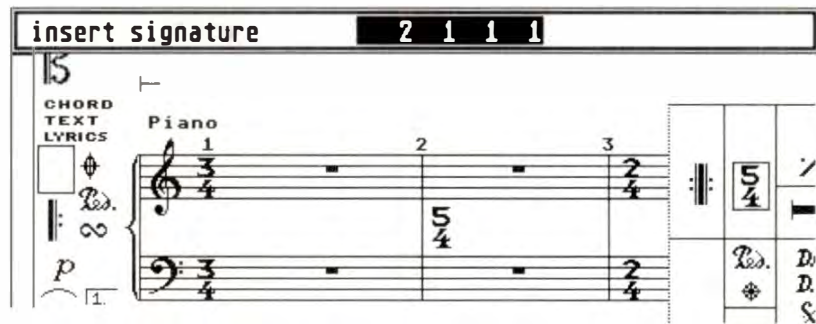
17.3 Time signature changes within the score

Please read Chapter 5, section 1.3.

To introduce a time signature change in the score, select the desired meter in the lefthand partbox and drag the time symbol to the desired bar. The program will automatically position the time signature to the nearest bar beginning.


Both nominator and denominator can be altered at any time once the time signature has been introduced by a short click on the desired value. The signature itself can be moved to a different bar by dragging and can be deleted by dragging it to the edge of the score display.
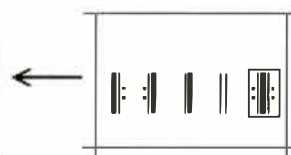
17.4 Alternative 2/2 and 4/4 symbols

The display of the 4/4 and 2/2 time signatures can be changed to their alternative symbols in the Global Score Parameters window ("Edit" menu or 'Shift-X'). No other time signatures are affected.
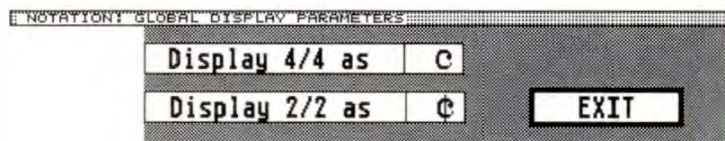
Different types of signs and double bars can be selected in the pop-up partbox and entered via the mouse. Like the time signature, they are global and belong to a specific bar, not to a track or pattern.

Once on the stave, signs can be dragged around or deleted via the mouse.

These signs are intended for transcription only, and have no effect on the actual running of the sequencer.

18. Global repeat signs; double bars

19. Making a system in Full Score mode

In Full Score mode, you can group together a number of individual staves using round or square-shouldered brackets, and linking the bar lines: a bracketted group of staves is called a "system".

19.1 Bracketting staves

In Full Score mode, if you click in the area just to the left of a stave, you will bracket that stave to the one above it. Click again, and the bracket is deleted.

A left-click enters/deletes round-shouldered brackets, a right-click, square-shouldered brackets.

Holding 'Shift' at the same time puts a bracket around all the staves in the Full Score mode.

To bracket, say, three staves, click the lowest stave to bracket it to its neighbour, then click the next stave up to bracket it to *its* neighbour.

You can combine brackets.

Score Display

In Full Score mode, if you click the top of a stave's bar lines, you will link that stave to the one above it. Click again, and the extended lines are deleted.

Holding 'Shift' at the same time links all the bar lines of the staves in the Full Score mode.
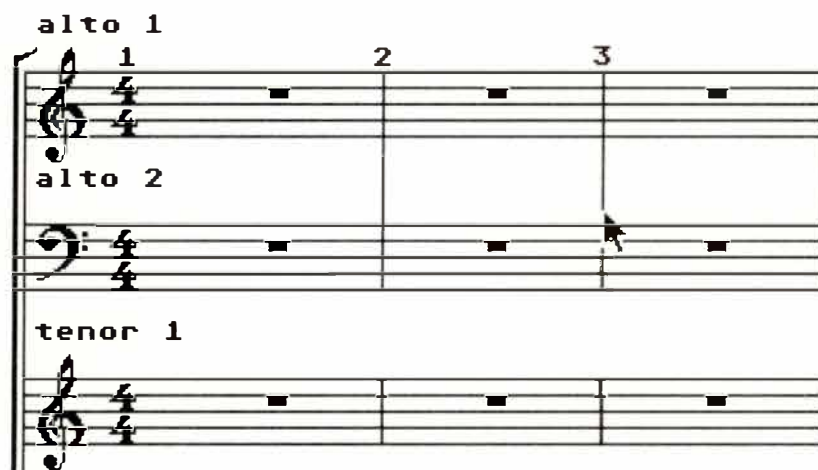
Note: the brackets and linked bar lines of a double stave are not deletable.

Score Display

20. Achieving an "empty" stave

Removing the tick from the "REST" box in the Parameter mode window will display a completely empty stave instead of the standard one containing automatic rests (so long as there are no notes in the stave). All parameters such as key signature, clefs, notation symbols etc will be shown.


The function is intended to allow the mixing of handwritten and computer-printed notation.

The "Minimum Distance" value of NOTATOR ALPHA's score editor is coarsely set by pressing '\' or 'Shift-\' (adding the 'Alternate' key increments/decrements the value), or by altering the "Minimum Distance" value in the Global Score Parameters window (press 'Shift-X').
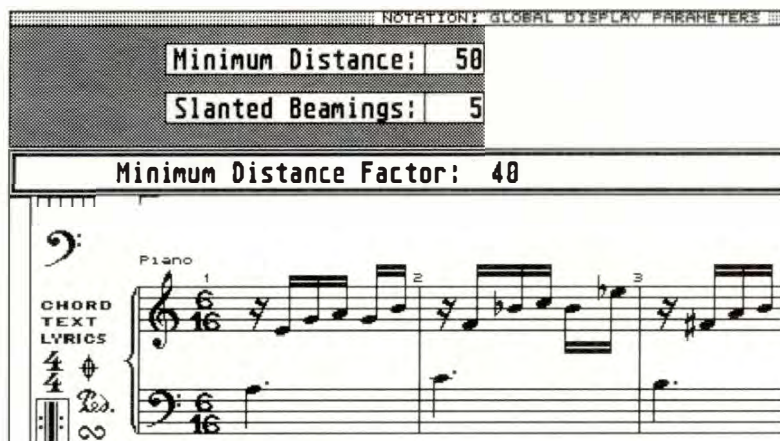
The horizontal position of notes and rests is determined by this "Minimum Distance" value. A small value reduces the space around notes and rests (especially in empty bars), whereas larger values will give notes and rests a space proportional to their lengths: a quarter note, for example, will get more space than a sixteenth note.

Score Display
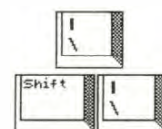
22. Polyphonic display

22.1 The basics

"Polyphony" is the ability to show rhythmically-independent parts or "Voices" in the same stave: each Voice's stem direction and rest display is independently controllable.

NOTATOR ALPHA is able to display up to four independent Voices in a track: two per stave, or four per double stave. Each voice is rhythmically independent from the others, and each can contain individual chords.

The assignment of individual notes to each of the four Voices is carried out in the "VOICE" column of the event list.

22.2 Polyphonic parameters

[X]

The polyphonic display parameters are to be found in the Parameter mode window (press 'X'), where clicking "POLYPHONIC" switches the display on.

The "VOICE" boxes activate the four possible Voices:

— Voice 1 is the main voice of the upper stave (or of the single stave if there is no double stave). It is always active.
— Voice 2 is the second voice of the upper stave (or of the single stave if ther is no double stave). Activate it by clicking its Voice number.
— Voice 3 is the main voice of the lower stave in a double stave. It is always active when "Split mode" is enabled.
— Voice 4 is the second voice of the lower stave in a double stave. Activate it by clicking its Voice number.

Each Voice is independently subject to the following parameters:

REST: each Voice has its own automatic display of rests: this is where the rest display can be disabled for each Voice. Where a stave displays both Voices, their rests will be displayed vertically, so that the upper rests are always Voice 1's or 3's, the lower rests always Voice 2's or 4's.

Rests entered by hand are unaffected by this Rest Disable and are moveable vertically.

STEM: this is where you can determine the direction of a Voice's stems. "AUTO" means that the stem direction is determined as usual by the pitch of the note. If you want a Polyphonic display, you should set the upper Voices (1 or 3) to "UP", and the lower Voices (2 or 4) to "DOWN" *(see section 12 "Note stems")*.

22.3 Allocating notes to Voices prior to entering them

Shift
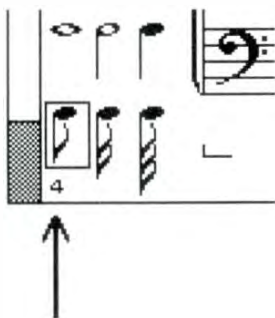
22.4 Allocating notes to Voices after entering them

22.4.1 Changing the Voice number of selected notes


Alternate
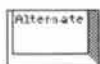
22.4.2 Pitch-dependent Voice allocation in a double stave

Alternate   S

Before entering notes from the partbox into a Polyphonic stave, giving a note a Voice number ensures it will be shown as belonging to that Voice.

The Voice number of notes and user-rests being entered with the mouse can be pre-selected via the little number in the bottom lefthand corner of the lefthand partbox.
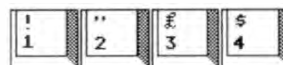
This number can be changed by clicking, or pressing 'Shift' with the typewriter pad's keys '1' to '4'.

The allocation of existing notes to Voices can be determined by changing their number. Apart from being able to alter the Voices of notes on an individual basis in the event list, there are various other methods you can use to alter Voices for use in the Polyphonic function.

To change the Voice number of a group of selected notes, hold 'Alternate' while tapping keys '1' to '4' in the typewriter pad.

In a double stave, NOTATOR ALPHA will assign notes to Voices automatically if you press 'Alternate-S': the split point will determine which notes belong to which Voice (above the split point, Voice 1; below the split point, Voice 3).

The assignment of notes to Voices can also be determined by "drawing" a "Voice Separation Line" in the stave with the mouse.

With Polyphonic mode enabled, click and hold with the mouse in the area just below, almost touching, the clef (if you are working in a double stave, between the clefs). The pointer arrow becomes a pointing finger. Now drag the mouse along the score, drawing the line around the notes to determine whether they belong to the upper Voice or the lower one. On releasing the mouse button, all the notes on the "wrong" side of the line will be changed.
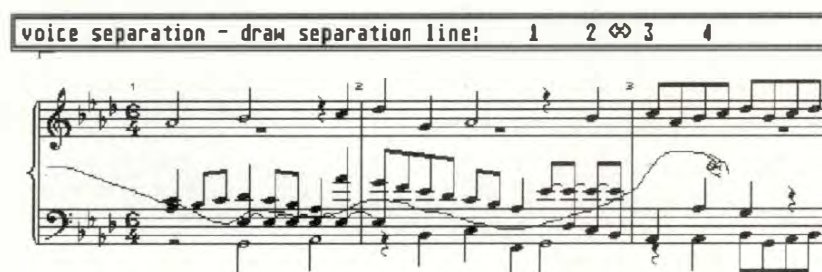
The Control Line reads "Voice separation — draw separation line" and tells you whether you are deciding between Voices 1 and 2, 2 and 3 or 3 and 4 (though this depends on the number of Voices enabled in the Parameter mode window). You decide between which Voices you wish to draw by clicking the right mouse button while holding the left one.

You do not have to continue drawing the line all the way to the other side of the screen: stopping part-way will simply mean that you will affect notes only as far as there.

22.5 Examples of Polyphony

22.5.1 Filtering Voices

To display notes of a certain Voice only, enable "POLYPHONIC" and click the numbers of the Voices you wish to display (1 and 3 if in a double stave), whose notes you want to "display solo". Voices 2 and 4 are not relevant to this example.

This is useful where you want to display and edit only one of the layers that were recorded while recording in the CYCLE mode *(Chapter 7: "RECORDING", section 2.2).*

Or, you might want to remove individual notes from the display, just by altering their "VOICE" value in the event list so that they match the number of a Voice you have switched off; that way, you can "spot-erase" trills or arpeggiations from the display and re-place them with the corresponding notation symbols, without affecting what is happening over MIDI.

By giving notes different Voice numbers, the division of notes between the left and right hands is determined by Voice allocation, not by pitch.

That way, a Middle C can be shown as belonging to the left or the right hand, depending on its Voice number at the time.

You can use the 'Alternate-S' technique described above to assign the whole track to the left and right hands (where the split point decides the allocation), then "fine-tune" the notes' Voices to finalize the display. Or use the "flexible split point" technique described above to continue the job.

22.5.3 Multi-Voice phrasing

To display two independent Voices in a stave, enable Voices 1 and 2 in the Parameter mode window (and Voices 3 and 4 if in a double stave). You should set the stems of Voices 1 and 3 to go up, those of 2 and 4, down.

It also normally makes sense to switch off the automatic rests of Voices 2 and 4, and to enter user rests when you need them, ensuring you pre-select their correct Voice number in the lefthand partbox.

NOTATOR ALPHA offers a whole range of graphical signs and symbols which can be entered into the score.

Graphical symbols can be entered from either partbox into the score.

1. Entering

There are two things to be aware of when entering them:

— The time position of a symbol, seen in the Control Line while still holding the mouse, should be made the same as the nearest note or rest — ideally, the note for which it is intended.
— In Full Score mode, ensure that you are entering the symbol in the correct track (watch the track name in the top left corner of the screen).

The position of a symbol is affected as follows:

— The vertical positions of symbols in a double stave are related to the positions of the upper stave's notes (apart from the Pedal signs). Therefore try to make the distance between the two staves and any parameters that affect the vertical position of the notes (clefs, transposition) as definite as possible <u>before</u> entering notes.

— The horizontal position of a graphical symbol is dependent on:
1. the position of the symbol by reason of its being a P_USER event with its own time position;
2. any graphical microshifting you carry out.

Do ensure that symbols are entered at the same time positions as those of notes or rests: that way, the positional relationship between symbols and notes is not changed if a bar width is altered, eg as a result of adding more notes into the bar or enabling/disabling Full Score mode.

2. Moving

Symbols can, like notes, be moved singly or in groups with the mouse, even in the same group as notes. As with notes, their time positions change when moved horizontally.
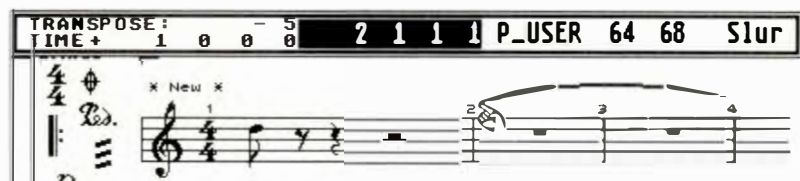
Dragging symbols while keeping 'Shift' depressed allows you to copy the objects to another destination.

Pressing 'Alternate' while dragging a symbol left or right lets you slightly move it without affecting the event's time position (watch the "HORIZONTAL SHIFT" value in the Control Line.

3. "Graphical microshifting"

```
HORIZONTAL SHIFT:     3   1   1   1   1  P_USER  64  68    Slur
VERTICAL  SHIFT:     -2
```
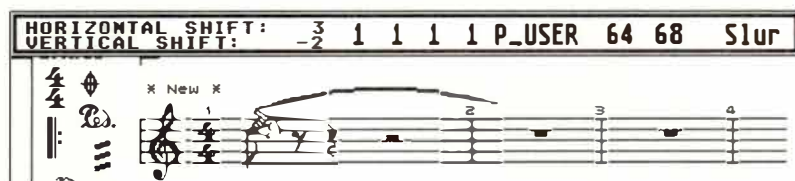
Thus, for example, overlapping Pedal signs can be separated without altering the events' MIDI time position.

Tip 1: "Graphical microshifting" should be reserved for small changes in position only: you should always place the signs at the correct time position first (that of the nearest note or rest) and only then should you microshift to "fine-tune" the position, if necessary.

Tip 2: The "VERTICAL SHIFT" parameter in the Control Line that you see when you press 'Alternate' and drag a symbol shows how much you are dragging the symbol up/down; the "TRANSPOSE" parameter you see when you drag a symbol without 'Alternate' does the same thing: they are the same function, except that their scales are different. So, to move a symbol vertically, it makes no difference whether you press 'Alternate' first or not: you get the same result.

4. Vertical formatting
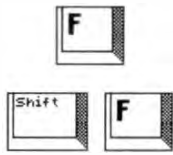
The 'F' key helps ensure that events of the same P_USER number share the same height.

Select the first object and move it to the desired vertical position. Pressing 'F' will move the next identical object to the same height as the first: you can go on pressing 'F' for more objects, or pressing 'Shift-F' formats all the identical events in the whole track with just one command.

The following events are vertically formattable:

P_USER 58:	guitar chord
P_USER 59:	chord symbol
P_USER 60:	text
P_USER 61:	lyric
P_USER 62:	dynamics
P_USER 63:	crescendo/decrescendo
P_USER 65:	segno
Control 64:	Pedal signs

Tip: be careful with Text and Lyrics — you cannot format more than one line. If you use the SNAP function (see next Chapter 13), you should not need to use Vertical Formatting anyway.

5. Deleting

Like notes, symbols can be deleted by dragging them in any direction to the borders of the score editor, or pressing 'Backspace'.

Dynamic signs and repeat signs can be entered where you like in the score. They have no effect on the MIDI output or sequence structure.

The following symbols are available:

The pedal signs (on and off) relate directly to MIDI Controller 64 (sustain pedal). After you have entered a pedal-on sign, NOTATOR ALPHA will automatically select the pedal-off sign in the part-box, so that pedal movements can be quickly entered without continuous recourse to the partbox (use the right mouse button for fast entering).

Manually-entered pedal signs can be vertically formatted *(see section 4 above);* played-in pedal signs cannot.

6. Dynamic and repeat signs

7. Pedal signs

8. Fermata, handgrip, accent and staccato signs

These symbols are "extensions" of the note for which they are intended. Their positions are relative to the pitch and position of the note: they "belong to" the note for which they are intended. Any change to the note such as transposing, moving, copying or deleting will automatically affect these symbols.

To assign one of these signs to a note, select the sign in either partbox and enter it onto the note, so that the note's time position appears in the Control Line. The exact position of the sign itself is determined by NOTATOR ALPHA.

To assign a sign to a group of notes, select the notes and enter the sign onto one of the flashing notes.

A note can be given more than one sign; a chord can only receive one of each of the signs.

Score Display

Slurs may be freely entered and their shape edited.

To enter a slur, first select the type of slur you require (bowing upwards or downwards), drag it in, positioning the lefthand end of the slur at the required position (so that it shares the time position of a note).

By releasing the mouse button and just moving the mouse, you are then able to set the other end of the slur where you like.

Clicking the left mouse button again will confirm the entry: while keeping the left mouse button depressed, you are able to alter the amount of "bend" of the slur by moving the mouse backwards or forwards.

Existing slurs can be edited as follows:

— dragging the slur by its left extremity moves the whole slur.
— "Graphical microshifting": while holding 'Alternate', the lefthand end of the slur can be dragged without this affecting the slur's time position (the righthand end remains where it is).
— dragging the highest/lowest point of the bow changes the height of the bow;
— dragging the righthand extremity edits the end position.

Note: ties, which appear when you lengthen a note (eg when straddling two bars), are automatically entered by NOTATOR ALPHA and cannot be altered.

10. Crescendo hairpins; lines; "first etc time repeat" sign

Crescendo/diminuendo signs may be freely entered and their shape edited. The operation is very similar to that of entering slurs.

To enter a cresc/dim hairpin, first select the type of sign you require (opening to the left or right), drag it in, positioning the lefthand end of the sign at the required position (so that it shares the time position of a note).

By releasing the mouse button and just moving the mouse, you are then able to set the other end of the sign where you like.
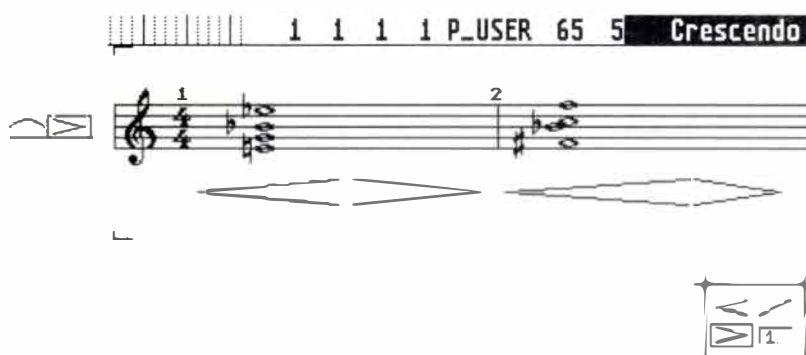
Clicking the left mouse button again will confirm the entry: while keeping the left mouse button depressed, you are able to set the angle of the opening (watch the Control Line) by moving the mouse backwards or forwards.

Editing an existing hairpin follows the same rules as slurs *(see above)*.

The line sign can be used for many different jobs — entering it is straight-forward as it follows the same rules as slurs and hairpins.

The "first/second etc time repeat" sign is also intuitive: place it above the desired bar and release the mouse button. You can now move the mouse down and to the right so that the size is correct; when you left-click, the text-window opens so that you can type in the number.

The sign is editable in both directions; dragging it by the corner moves it. It has no effect on the MIDI output.

11. Chord symbols

Chord symbols (select "CHORD" in either part-box) may be inserted with either mouse button at any desired location. A box will appear when you release the button in which you can type the chord and its description.

The "MINOR" icon in the input window determines whether the chord letter appears as a capital letter or not.
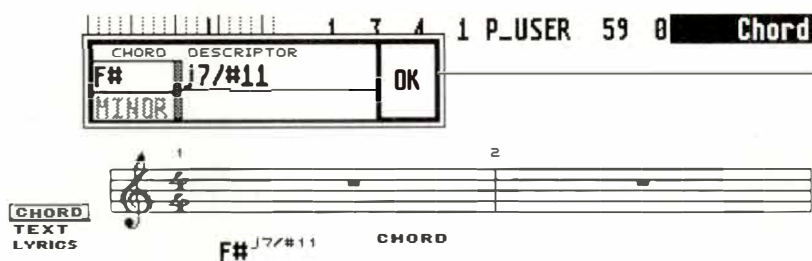
The descriptor can be typed on the upper or the lower line, or both.

Chords are automatically transposed, just like notes, if you transpose the display (use the "TRANSPOSE" box in the Parameter mode window), and will correctly reflect the current key signature.

You can even "enharmonically shift" the display of the chord by using 'H' or 'Shift-H' *(see Chapter 11: "SCORE DISPLAY", section 15.3).*
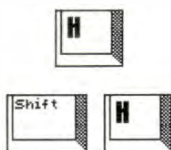
This symbol is selected from either partbox and entered into the score in the usual way; short left-clicks on the grid enable you to enter the desired fingering spots (another left-click deletes them).

Clicking just above each "string" of the grid allows the entering of a "stopped" or "open" symbol. To show fingering further up the neck than the grid allows, insert a small "Text" *(see next Chapter on Text entering)* number to the left of the "nut" to indicate the position of the barré.
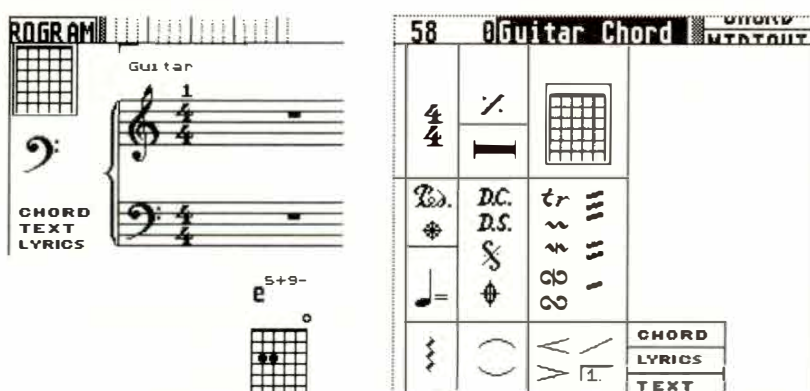
To move the symbol, click <u>and hold</u> it. When the mouse hand appears, then you can move it.

'Esc' allows you to alter the name of the chord above the tabulature; this chord is auto-transposed if you transpose the notation display *(see section 11 above for details)*.

13. Trills and ornaments
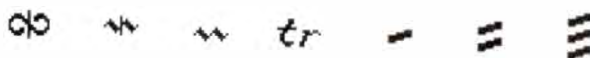
Trill signs are entered onto the stave as usual. They do not affect the MIDI output.

The zigzag trill symbol's righthand end can be dragged to lengthen the symbol.

14. Arpeggio/ broken chord symbol

Enter this symbol as usual, and position it at the same time position as the chord to which it applies. It has no effect on MIDI data.
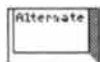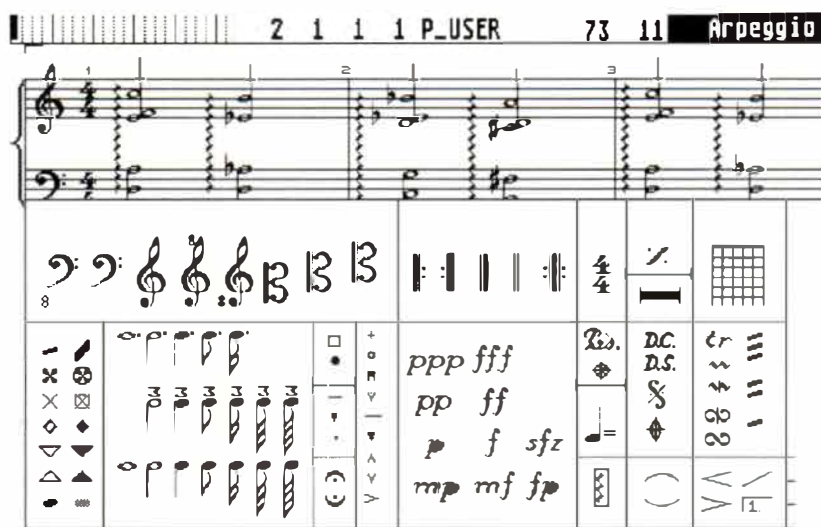
It can be lengthened by dragging its lower end downwards. If necessary, use "graphical microshifting" (press 'Alternate' while dragging) to move the chord and symbol away from each other.

When this sign is entered onto the stave, its tempo is that of the sequence's tempo. This can be changed in the event list in the P_USER event's "second data byte".
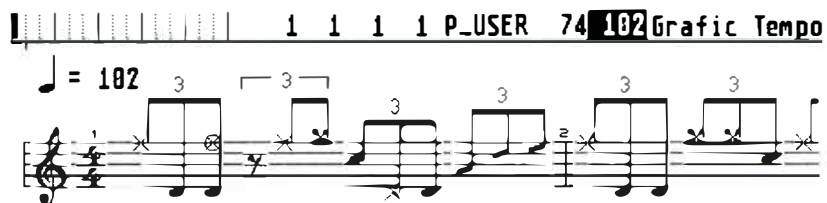
Apart from the text that is automatically entered by NOTATOR ALPHA (track names, bar numbers etc), there are two P_USER events that allow you to write directly into the score:

TEXT: freely-positionable P_USER 60 Text, which is independent of notes on the stave.

LYRICS: these P_USER 61 events affect the position of notes on the stave.

There is a range of text fonts and attributes at your disposal.

The little numeral to the right of the "TEXT" symbol in the lefthand partbox allows the setting of a font. This number is duplicated in the text-input box (see below).

Drag the "TEXT" symbol from either partbox to the desired position. On releasing the mouse button, a window will appear in which you can type your text.

TEXT ATTRIBUTES: under the text input line, certain attributes can be chosen:

BOLD
UNDERLINE
ITALIC
LIGHT
OUTLINED

As well as the "text attribute" selection panels, the panel containing the font style numbers 1 to 7 allows the selection of various character sizes and fonts *(see section 5)*.

1. The basics

2. User-positionable Text events

The righthand-most box determines whether the text will appear to the left, right or at the centre of the screen (useful when preparing a title), or whether it is positionable anywhere by you.

text attributes							OK
BOLD	UNDER	ITALIC	LIGHT	OUTLINED	1	anywhere	

TEXT ATTRIBUTES :

bold   <u>underlined</u>   *italic*   light   outlined

The text line in the event list shows the text itself, and at the righthand end, the font size you have selected.

3. Lyric events

As well as Text events, which can be placed any-where, you can use Lyric events which automatically adjust the notation relative to the lyrics you enter.

To enter Lyrics, drag the "LYRICS" symbol from either partbox and place it under the first note of the melody: ensure "SNAP" mode is on (look in the Control Line).

A little underlining cursor will appear: type your first syllable; press the 'Tab' key to advance the Lyrics cursor to the next note — that way, you can type whole lines of Lyrics without a break. Leave the Lyrics mode with 'Return'.

	2	1	1	1	game				5
	2	1	1	1	NOTE	1	C4	64	3 47

What   game shall we play to-day?

To advance the Lyrics cursor past a note that needs no Lyric, press 'Tab' again: the same applies to jumping past rests and dotted notes.

A Lyric will be auto-centered under its note, though by using "graphical microshifting" (press 'Alternate') its horizontal position relative to the note can be changed.

You are well-advised to always use the "SNAP" method of entering Lyrics *(see Chapter 10: "SCORE EDITOR: BASIC FUNCTIONS", section 5.4)*: click the other mouse button while entering the Lyrics cursor so that the Control Line says "SNAP".

The Lyrics cursor will now be "quantized" to one of the evenly-spaced horizontal (and invisible!) "SNAP Lines" on the screen.

This makes it easier to add more Lyrics to the end of an existing line, or to add evenly-spaced lines under existing ones, since your positioning of the Lyrics cursor can be a little more approximate.

The Lyric line in the event list shows the Lyric itself, and at the righthand end, the font size you have selected.

Tip: while in the Lyrics mode, the mouse pointer will disappear and the screen appear to be frozen: as soon as you press 'Return' once you have entered the Lyrics, it comes back to life.

4. Editing Text/Lyrics

Existing Text/Lyrics events can be treated as any other graphical symbol: they can be moved around at will, even by using "graphical microshifting" with 'Alternate'.

To amend the text, its attributes or font size, click the text to start it flashing then press 'Esc', or double-click the text on the stave.

5. Text fonts

NOTATOR ALPHA has a good-looking font for text and lyrics, variable in size, which is available in addition to the Atari ST internal fonts. This additional font is automatically loaded when the program is started. The selection of the font and its sizes is conducted via the text input box (or the little number to the right of the "TEXT" symbol in the lefthand partbox) using the following assignment:

Number	Font
1	Times 12 Point
2	Times 10 Point
3	Times 18 Point
4	Times 24 Point
5	System font 8*16
6	System font 8*8
7	System font 6*6

(Note: unlike ALPHA's "big brother" program, NO-TATOR, no "Font assignment window" is provided: the fonts you select will be automatically adopted for printing, at the printer resolution you have selected in the Printer Adaptation *(see Chapter 14: "SCORE PRINTOUT", section 7.2)*

Fuga II
a 3 voci

J.S.Bach

NOTATOR ALPHA can print your score on a whole range of printers, from simple 9-pin printers to 24-pin printers. Printout can take place direct from the score editor. The parameters that govern the printing are in the "Edit" menu's "Printer" window.

It is always the current track which is printed, unless you are in Full Score mode, in which case the tracks in the current pattern are printed.

Before the printing process can begin, NOTATOR ALPHA must be adapted to your particular printer. This adaptation need only be conducted once, on acquiring NOTATOR ALPHA *(see section 7 below)*.

1. The basics

2. Vertical print area

The upper and lower limits of the area which can be printed are represented by small graphical "corner-brackets" above and below the lefthand end of the stave (above top stave, below bottom stave in Full Score mode).

To set the amount of space above the top stave, drag the top stave up or down with the left mouse button. To set the amount of space below the bottom stave, drag the lower printing limit up or down.
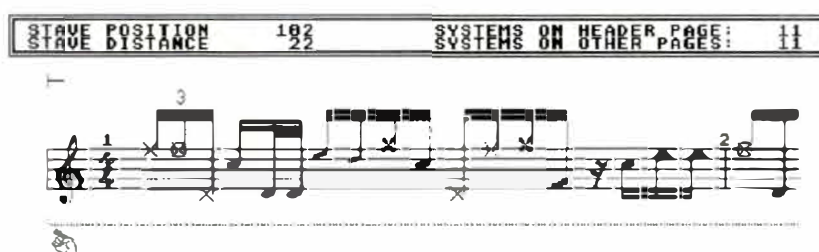
While dragging, the Control Line tells you the absolute position of the stave/printing limit being dragged, its position relative to the upper printing limit/stave above it, and the number of systems you could print out per page with the staves/printing limits at their present positions.

Tip: ensure that everything you want to print is included in the print area. Objects outside this area will not be printed or will be only partially printed.

The upper marker represents the upper limit of the normal print area. It is normally on the score editor's upper borderline. Dragging this marker downwards (mouse pointer inside the angle) allows space (which the Control Line calls the "Header Space") to be made for a title, composer's name, copyright owner etc. If "PRINT HEADER" is "ON" in the Printer window, this header information above the marker will be printed on the first page, but not on subsequent pages.
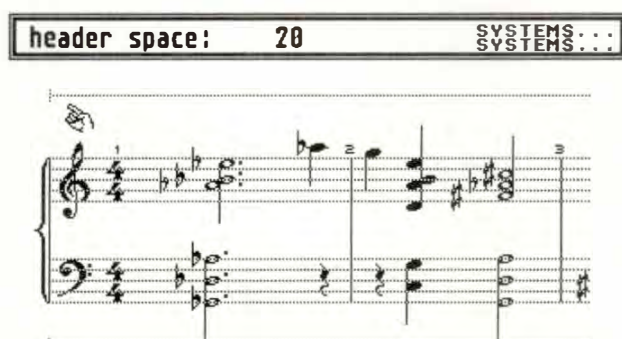
The reason why the Control Line gives two "Systems on...Page" readouts is that the page with the header may be able to fit fewer systems than the subsequent pages.

Tip: ensure that all objects that do not belong to the header are positioned below the upper printing limit.

Score Printout

4. Print parameters

Edit

Printer

The Printer window has various parameters that control the printer output:

```
▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓ PRINTER ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓

ADAPTATION NEC P6 default adaption (24 pin dot matrix)

                          LEFT LIMIT    1  1  1  1    O N
 LOAD Printer Adaptation  RIGHT LIMIT   5  1  1  1

 SAVE Printer Adaptation  BAR NUMBER    STEP        4    O N
                                        OFFSET      0

                          PRINT HEADER            --
                          PRINT TRACKNAMES        O N
                          JUSTIFY LAST STAVE      --
                          LEFT MARGIN             0
                          RIGHT MARGIN            0
                          BARS PER LINE

              EXIT        PRINT SINGLE PATTERN
```

"LEFT/RIGHT LIMIT": with the locators "ON", the portion of the score to be printed can be exactly defined. Upbeats can be included by setting eg "LEFT LIMIT: 0 4 1 1".

"BAR NUMBER": the bar numbers displayed in the score may be increased by a certain value ("OFFSET"); you can also determine the "STEP" between the numbers. The bar number display can also be switched off altogether.

"PRINT HEADER": enabled, NOTATOR ALPHA will print any title, credits etc that appear above the top printing limit in the "Header" on the first page, but not on following pages.

"PRINT TRACK NAMES": track names may be removed from the printout.

"JUSTIFY LAST STAVE": the last system will fill the entire width of the page.

"LEFT/RIGHT MARGIN": lets you set the left and right printing margins, no matter what the current printer adaptation is set to. They can be graphically set in the Page Preview window.

"BARS PER LINE": forces all lines to have the same number of bars. If no value is entered, the program automatically decides the number of bars per line.

"PRINT SINGLE PATTERN": prints the current pattern.

"EXIT": quits the window without your having to print something.

5. Page Preview

5.1 Principle

"Page Preview" is the special function in NOTATOR ALPHA which allows you to view a whole page on the screen, in miniature, before printing: to access it, press 'P' when in the event editor. The screen will show a miniaturised version of the first printed page.

To "turn the pages", click the page number with either mouse button or press the bracket keys in the calculator keypad.

The calculator keypad numbers, or the "'Control' + mouse" feature (see Chapter 3.1.2) allow direct access to any page (including double-digit numbers). The first time you access a page this way, Page Preview will automatically turn the pages until the desired one is displayed. From this point on, any of the pages which have just been "turned" may be immediately accessed.

Note: this immediate access of pages is only available while you remain in Page Preview. If you quit it, then re-enter, the process must be repeated (see previous paragraph).

5.2 Automatic linewrap

Pressing 'P' prints out the displayed page.

How many bars you get per line is automatically decided by NOTATOR ALPHA. The following factors influence the result:

— the space the notes need;
— "MINIMUM DISTANCE" in the Global Score Parameters window;
— the paper width;
— the "LEFT/RIGHT MARGIN" parameters in the Printer window.

Changes to these factors (eg by loading a different printer adaptation) can therefore change the number of bars you get to a line.

The parameter "BARS PER LINE" (in the Printer window) forces all lines to have the same number of bars. No value here allows NOTATOR ALPHA to automatically decide as usual.

CAUTION: having too high a value here can lead to overlapping notes. The most bars you can get per line without overlapping is obtained by setting the "minimum distance" parameter in the Global Score Parameters window to "1" and leaving NOTATOR ALPHA's automatic linewrap to decide the exact number.

"BARS PER LINE" affects the display of all the staves, single or in Full Score mode.

The left and right print margins can be manually adjusted in Page Preview by dragging the thin dotted lines either side of the print display. Alternatively, these margins may be numerically-entered in the "Left margin" and Right margin" boxes.

The "Minimum distance" parameter defines a minimum distance between notes (and thereby influences the bar width). This function is identical to the one in the score editor.

The "Minimum distance" and "left/right margins" settings are edited on the first page and apply to all the subsequent pages.

5.2 Fixed number of bars per line

5.4 Left/right margins

5.5 Minimum distance

5.6 Flip page

This function is used when a large printed page can no longer be seen in its entirety on the screen. This happens when your printer supports DIN A3 or "US legal" page sizes. Clicking "Flip page" or pressing '/' allows you to view the upper or lower portions of the page.

6. Printing

Printing can take place from the Printer window or direct from the score editor.

Important: ensure that the printer head is lined up with the top of a sheet of paper before printing.

6.1 Printing a pattern

"PRINT SINGLE PATTERN" in the Printer window begins the printing process according to the "LEFT/RIGHT LIMITS".

"QUICK PRINT": pressing 'Shift-P' when in the score editor starts the printing process from the top of the track(s), without any header.

6.2 Aborting the printing

While printing, pressing any key will stop the process.

The printing may continue on for some time depending on the size of the printer's buffer. One way to stop the printer is to switch it off and on again: this empties its buffer. Some printers have a reset switch that has the same effect.

7.1 The basics

Almost every printer requires its own set of formatted instructions. There is not really any such thing as a standard configuration among printers since each new generation produces a new set of problems.

Printer drivers or "adaptations" can be loaded from and saved to the program disk.

NOTATOR ALPHA comes with a whole range of printer adaptations in the folder called "PRINTER" on the program disk. The vast majority of 9 and 24-pin printers will run successfully off the adaptations that are provided with NOTATOR ALPHA: simply work through the list until you find one that suits your printer, then save the adaptation as part of your AUTOLOAD.SON.

The current adaptation is saved as part of any "*.SON" file. You should ensure that your "AUTO-LOAD.SON" includes your printer's adaptation *(see also Chapter 20: "DISK OPERATIONS", section 2.3 "Autoload Song")*. Your "AUTOLOAD.SON" should be saved onto your working program disk. If an AUTOLOAD.SON song is present on the program disk, it will be auto-loaded with NOTATOR ALPHA, saving you the trouble of having to load the printer adaptation separately.

Saving the adaptation as part of your "AUTO-LOAD.SON" is <u>not</u> done via the "SAVE Printer Adaptation" option in the Printer window *(see section 7.3 below)*. **It is done on the main page via "Save Song" in the "File" menu.**

7.2 "Load Printer Adaptation"
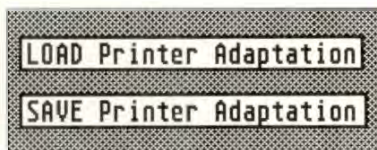
By clicking "LOAD Printer Adaptation" in the Printer window, you gain access to NOTATOR ALPHA's range of adaptations for common printers; their filename extension is "*.PRT" (ensure the program disk is in the drive before clicking).

```
LOAD Printer Adaptation
SAVE Printer Adaptation
```

If your particular printer's name cannot be found in the PRINTER folder or in any of its sub-folders, you could try loading one of the existing adaptations — your printer will come to no harm. The worst that can happen is that a load of nonsense will be printed, and that you will use extra paper!

7.3 "Save Printer Adaptation"

By clicking "SAVE Printer Adaptation" in the Printer window, you are able to save the current printer adaptation, together with a name you can enter yourself in the upper text line, to the PRINTER folder on your program disk.

This is not the same as saving the adaptation as part of the "AUTOLOAD.SON" *(see above);* instead, it is for adding to the printer archive in the PRINTER folder.

NOTATOR ALPHA is compatible with a whole range of printers that support graphics. The quality of printout is very much dependent on the printer being used, and here, the ultimate deciding factor is the printer's graphic resolution, which is normally given in dots per square inch (DPI).

9-pin printers eg STAR LC 10: these are low-price, low (72 DPI) resolution printers.

24-pin printers eg NEC P6: these are in general use and can represent good value for money, with a resolution of 180 DPI.

High resolution 300 DPI printers: the Hewlett Packard DeskJet series; the Canon BJ10e (and compatible bubblejet printers); the Hewlett Packard Laserjet laser printers (but not the Atari laser printers).

Other points to bear in mind when choosing a printer:

— quality of the paper transport. Notation requires a good quality mechanical transport to avoid spurious graphic faults;
— speed of printing;
— noise;
— price and availability of spare parts;
— compatibility; it makes sense to choose a printer known to be compatible with NOTATOR ALPHA.

If you own a NEC P6 or compatible 24-pin dot matrix printer, you are fortunate, in that NOTATOR ALPHA defaults to this adaptation if no alternative adaptation is present in the "AUTOLOAD.SON".

Score Printout

Quantization is the program's way of adjusting the time position of events to conform (with a range of strictness) to a preset "timing template": those recorded notes that do not fall exactly on the quantization steps (eg 1/16ths) of the timing template are shifted so that they do.

To ensure that recorded notes and other events are arranged in precisely the right order, any sequencer must have a form of internal metronome or "time keeper": this is the sequencer's "clock", which, like all clocks, gives out ticks or "pulses", though these pulses are internal and not heard by the user.

The closer its pulses are to each other (called the "resolution"), ie the more pulses there are in a given unit of time, the more accurately the sequencer can time the position of an incoming event. An extremely high resolution would represent a normal analogue tape recording.

For any time-correction to work properly, you must have recorded the music in time with the metronome.

Only then can the sequencer recognize the user's intended timing, and only then can the positioning or altering of events' time positions be expressed in terms of bars, beats etc.

NOTATOR ALPHA's quantization retains the notes' original lengths.

Providing you have played as closely as possible to the metronome, quantization will hardly alter the "musicality" of the music: the danger of misinterpreting the timing is almost zero because the musical context is taken into account.

1. The basics

Quantization

The decision as to which position a note receives is influenced both by the note itself and the surrounding notes. NOTATOR ALPHA will recognize systematic timing characteristics, interpret and evaluate them and react accordingly. For instance, where there is any doubt, the timing-correction will tend to advance the notes of someone who always tends to play behind the beat. Chords are treated as a whole. In practice, "QUANTIZE" is very inconspicuous and the quantized result will virtually always be as you had expected.

Quantization, because of the amount of calculation involved, has to *alter* the timing of events. Of the other track parameters such as "TRANSPOSE", or "VELOCITY" which are "playback" parameters that are calculated in realtime as the data is played back, "QUANTIZE" is the exception *(see Chapter 21: "AP-PENDIX", section 1.1).* This, however, will not affect you in practice, since:

"QUANTIZE" is reversible, can be applied before, during or after recording (with results you hear immediately) and generally behaves like other the other track parameters.

You will notice that, even though "QUANTIZE" acts like the other track parameters, its effect on time positions *can be seen in the event editor*, something not possible with the other track parameters. This is so you can make the correct musical decisions without guesswork, since timing is so important.

A track is quantized simply by scrolling to the
desired "QUANTIZE" value in the track parame-
ter box. Each track can have a different "QUAN-
TIZE" value.

The values are: 1/4, 1/6, 1/8, 1/12, 1/16, 1/24, 1/32,
1/48, 1/64, 1/96.

The "1/768" setting represents the track in its un-
quantized state (sometimes called "realtime").

A "QUANTIZE" value given to an empty track
will lead NOTATOR ALPHA to "automatically
quantize" after recording in that track.

This means there is no need to quantize after each
recording, as quantizing occurs automatically when
ending a recording via STOP or START. Apart from
the time-saving aspect, there is no difference between
quantizing before or after a recording. If recording in
CYCLE mode, quantizing will occur automatically
after each round *(see Chapter 7: "RECORDING")*.

2. How to Quantize

```
┌─────────────────────────┐
│ ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓  TRACK: │
│ ─────────               │
│ CHANNEL       1         │
│ QUANTIZE   768          │
│ TRANSPOS           ▶    │
│ VELOCITY                │
└─────────────────────────┘
```

Quantization

1. Mouse operations within a pattern

1.1 Track copy
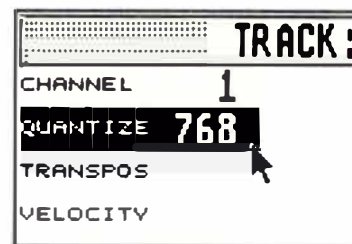
Within a pattern, to duplicate a track, drag it (by its name) to a new *empty* destination track and release the mouse button.

```
┌─STATUS─ Pattern: 1 ─CHANNEL─┐
│  1 name                    1 │
│  2   ✋....................  │
│  3   .                      │
│  4                          │
```

1.2 Track merge
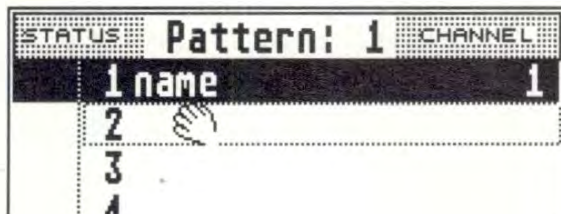
Within a pattern, to merge two tracks, drag one (by its name) on top of a new *recorded* destination track and release the mouse button. You will be asked to confirm or cancel the operation.

```
┌──────────────────────────────────┐
│  STOP  Exchange or Merge          │
│        these tracks?              │
│                                   │
│             ▸                     │
│                                   │
│  [ CANCEL ] [ EXCHANGE ] [ MERGE ]│
└──────────────────────────────────┘
```

1.3 Track exchange
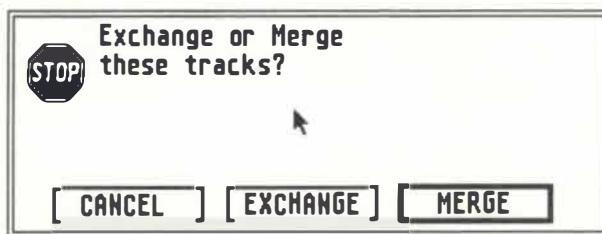
Within a pattern, to swap the position of two tracks, drag one (by its name) on top of a new *recorded* destination track and release the mouse button. You will be asked to confirm or cancel the operation.

1.4 Track move

Within a pattern, to move a track to a new position, drag it (by its name) to a new *empty* destination track; *without releasing the left mouse button*, depress the right mouse button as well, then keeping the right mouse button depressed, release the left mouse button.

Copy ...

1.5 Track replace

Within a pattern, to replace a track with another track, drag it (by its name) on top of the track to be replaced; *without releasing the left mouse button*, depress the right mouse button as well, then keeping the right mouse button depressed, release the left mouse button. You will be asked to confirm or cancel the operation.

```
┌─────────────────────────────┐
│       Destination not empty │
│  ◆!                         │
│                             │
│                             │
│     [ Cancel ]  [REPLACE]   │
└─────────────────────────────┘
```

1.6 Track delete

Backspace

Dragging a recorded track to the left hand side of the screen deletes it (or press 'Backspace'). However, you can get it back by clicking the "UNDO" icon (until the next delete or other event-altering process).

You may copy the events of a complete track including its track parameters (the "source" track) to an empty track in a different pattern (the "destination" track) with "Track" in the "Copy" menu.

2. Copy menu: track

```
Copy
Track
```

```
COPY TRACK/SEGMENT
     SOURCE            DESTINATION
PATTERN:      1   PATTERN:      1
TRACK  :      1   TRACK  :      2


        CANCEL            OK
```
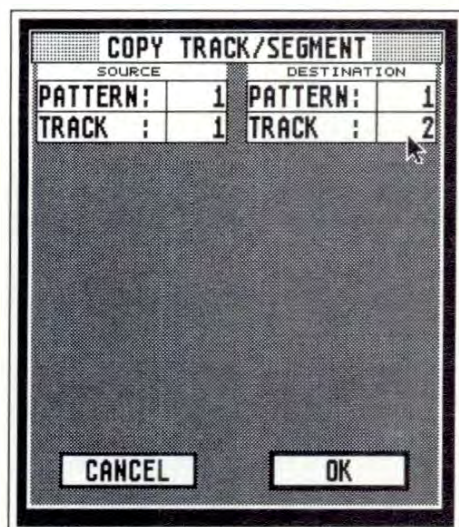
If the destination track already contains data, you will be asked if you wish to MERGE the two tracks into the destination track or cancel.

Copy ...

3. Copy menu: segment

Copy
Segment

You may copy the events of part ("segment") of a "source" track to a "destination" track with "Segment" in the "Copy" menu.

```
┌─────────────────────────────────┐
│   COPY TRACK/SEGMENT            │
│     SOURCE        DESTINATION   │
│ PATTERN:      1  PATTERN:     1 │
│ TRACK   :     1  TRACK   :    1 │
│                                 │
│   1  1  1  1      3  1  1  1    │
│    LEFT LIMIT     TO POSITION   │
│   3  1  1  1                    │
│   RIGHT LIMIT                   │
│                                 │
│   Number of Copies:        1    │
│            REPLACE:       --    │
│                                 │
│  ┌────────┐      ┌────────┐    │
│  │ CANCEL │      │   OK   │    │
│  └────────┘      └────────┘    │
└─────────────────────────────────┘
```

For the source track, select the segment's left (inclusive) and right (exclusive) limits, and select the destination track and the left limit or start position of the segment's destination.

If "REPLACE" is switched off ("--"), and the destination track already contains data, you will be MERGING the segment into the destination track.

If "REPLACE" is switched "ON", you will be erasing the destination track's data at that point and replacing it with the segment.

The source segment may be copied many times end-to-end by selecting a "Number of Copies" value, so "filling" a track or part of track with the chosen segment.

The source track can also be the destination track.

If you are in the event editor, you can define the left limit by clicking that event and pressing the 'F1' key, and define the right limit by clicking the last note of the segment and pressing 'F2'.

When you go to "segment copy", the limits will be ready.

Note: because the right limit is always exclusive, it will actually show a position one pulse more than the last event, so that the last event is included in the segment.

Example 1: bars 21, 22, 23 and 24 of a solo are to be copied to bars 1-4 of the same track, and what was already there is to be simultaneously erased:

Left limit:	21 1 1 1
Right limit:	25 1 1 1
To position:	1 1 1 1
Number of Copies:	1
Replace:	ON

Example 2: when bars 1 and 2 of a drum track are copied as follows the result is one long track of 16 bars (7 new repetitions and the original):

Left limit:	1 1 1 1
Right Limit:	3 1 1 1
To position:	3 1 1 1
Number of Copies:	7

Example 3: a typical single 1/16th note repeated "sequencer" line is required over two bars:

— ensure the display format is set to "1/16" (because we are dealing with the third column of the time position — *see Chapter 5: "POSITIONING"*);
— select an empty track and enter its event editor (press 'E');
— enter one note at 1 1 1 1, then do as follows in "segment copy":

Left limit:	1 1 1 1
Right limit:	1 1 2 1
To position:	1 1 2 1
Number of Copies:	31

4. Copy menu: pattern

This function allows the copying of a whole pattern with its 16 tracks to another pattern number.
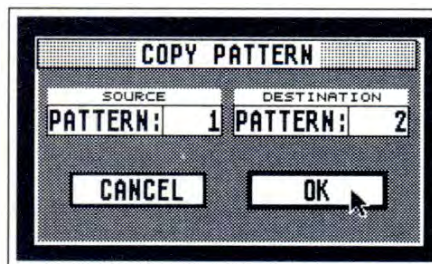
"New Song" in the "File" menu asks you whether you want to "initialize" NOTATOR ALPHA, ie wipe all existing music data and start again with a virgin program: make sure your data is saved to disk first.

```
┌─────────────────────────────────┐
│    NEW SONG:                    │
│ ╲?╱ (Init all data)             │
│  ╲╱ Are you REALLY sure?        │
│                                 │
│  ┌─────────┐   ┌─────────────┐  │
│  │ Cancel  │   │     OK      │  │
│  └─────────┘   └─────────────┘  │
└─────────────────────────────────┘
```

The action of loading in your "AUTOLOAD.SON" has the same effect of giving you a fresh program with the advantage of loading your favourite default settings. (Loading *any* "*.SON" file erases the existing data anyway, so always check you have saved the existing data before you load.) *(See also Chapter 20: "DISK OPERATIONS", sections 2 "Load/save song" and 2.3 "Autoload Song".)*

5. "New Song"

```
┌──────────┐
│ File     │
├──────────┼────────────┐
│          │            │
│ ─── ─── ─── ─── ─── ─── │
│                        │
│ ─── ─── ─── ─── ─── ─── │
│                        │
│ ─── ─── ─── ─── ─── ─── │
│                        │
│ ─── ─── ─── ─── ─── ─── │
│                        │
│ ─── ─── ─── ─── ─── ─── │
├────────────────────────┤
│ New Song          ▶    │
│ ─── ─── ─── ─── ─── ─── │
└────────────────────────┘
```
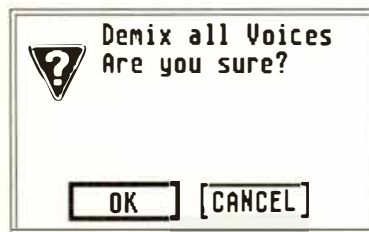
Copy ...

6. "Demix All Voices"

Keystroke 'Alternate , (comma)' takes the events belonging to the 4 (polyphonic) Voices and divides them amongst the first four tracks of the current pattern.

The Voice number determines the track number. Clicking "OK" in the dialog box initiates the process.

```
┌──────────────────────────────┐
│        Demix all Voices      │
│   ⚠  Are you sure?           │
│                              │
│                              │
│     ┌─────────┐ ┌────────┐   │
│     │   OK    │ [CANCEL]   │
│     └─────────┘ └────────┘   │
└──────────────────────────────┘
```

If a destination track already contains events, a dialog box will warn you of this. A Voice cannot be assigned to a track that already contains events. Clicking "Continue" attempts to assign the next Voice to its corresponding track number.

```
┌──────────────────────────────┐
│        WARNING!              │
│   ⚠  TRACK NOT EMPTY!        │
│        Can't demix this Voice│
│                              │
│   [CONTINUE]  [ ABORT ]      │
└──────────────────────────────┘
```
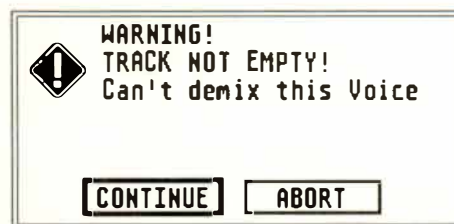
This assignment function is of use, for example, to split up the individual layers when you have used "Cycle" recording *(see Chapter 7: "RECORDING", section 2.2)*.

Copy ...

An arrangement, musically-speaking, is the putting together of a piece of music. This task is made particularly easy and flexible by a function that assembles patterns: the Arrange mode.

The "arrange list" allows you to assemble the different musical sections of a piece of music. These sections are the patterns.

1. The basics

For instance, the verses, choruses, bridges, intro and outro of a piece can be recorded independently of each other in different patterns, each with up to 16 tracks, and assembled and played in the desired order in the arrange list.

Each line of the arrange list is called an "entry": it contains the instruction to the program to play a certain pattern at a certain time, and gives the pattern's name.

In this chapter, we will refer to an "entry" when we are refering to the pattern as part of the structure of the arrange list, and to a "pattern" at other times.

Tip: think of the arrange mode as a "sequencer for patterns", in the same way that NOTATOR ALPHA are sequencers for events. The entries in the arrange list are not recorded material, but simply instructions that tell patterns when they should play.

The "arrange cursor" moves down the list when the sequencer is running, showing which entry is the current one.

```
O N
ARRANGE
```

Arrange Modus

Whenever the arrange mode is switched on, get into the habit of selecting patterns by moving the arrange cursor to the corresponding entry, rather than manually selecting a pattern number in the pattern window.

An entry in the arrange list consists of a "start-bar" *(see section 3)*, **a pattern name** *(see section 2)* **and a pattern number** *(see section 3)*.

An entry in the arrange list only ever contains one pattern at a time, never more, and each entry occupies a separate line. This is so each entry in the list can be given a name.

With the arrange mode switched on ("ARRANGE" "ON" in the "information bar"), which patterns are played when is determined by their entries' start-bars in the arrange list and corresponding pattern number.

Every single entry in the arrange list can be given a set of "pattern parameters". Even if <u>the same</u> pattern appears more than once in the arrange list, it can be given a different set of pattern parameters each time:

— **"POSITION"**: the pattern as a whole can be moved in fine steps.
— **"LENGTH"**: the length of the entry can be altered.

These pattern parameters are, like track parameters, "playback" ones, meaning that they affect data only as it is played through the MIDI outputs: they do not alter data in the computer's RAM. This is why the same pattern can be used more than once in the arrange list and yet each entry will sound quite different each time.

The length of a pattern is determined by the start-bar of the following entry. It will stop when the next entry starts.

This means that pattern lengths are decided by the succession of entries in the arrange list.

An entry that has no entry following it is of "unlimited" length ("Pattern LENGTH": "no limit" — *see section 8.2).*

The arrange list, with its names and visual arrangement, is self-documenting. The arrange list alters nothing within the patterns' data since all the pattern parameters are "playback" parameters, which means you can change your mind at any stage during composing and arranging.

Arrange Modus

2. Naming entries in the arrange list

[2nd verse] [OK]

[Shift] [N]

[verse___] [OK]

[Shift] [Esc]

There are two ways of naming entries in the arrange list:

1. **An entry in the arrange list can be automatically force-named by naming the pattern window itself: press 'Shift-N' or double-click where it says "Pattern:XX" above the pattern window.**

    This is the most flexible way of naming an entry because it is the entry's pattern number that determines the name: the name goes where the pattern number goes. You can override this automatic name by using the following method, but once an entry has been named by the following method, you cannot revert to this automatic one.

    So, name your patterns as soon as possible with general names such as "Count", "Intro", "Verse", etc; this will help to show you what is where as your song builds up.

2. **An entry in the arrange list can be named by pressing 'Shift-Esc' with the arrange cursor on it, or double-clicking the entry's name.**

    This is not the same as the first method. Here, the entry as a position in the list is named, irrespective of the pattern number: changing the pattern number has no effect on the name. It is best only used to override the automatic naming of the first method. For example, where the same pattern appears a second time in the list, you could call it "Verse 2", overriding its original name of "Verse 1".

Use 'Esc', 'Backspace', 'Delete', left and right cursor arrows as usual when typing in the name.

Arrange Modus

An unnamed entry in the arrange list defaults to the name "Pattern".

The "start-bars" down the left-hand side of the arrange window represent the bars in the song at which the pattern entries will start, ie the tracks in each pattern will start to play from their 1 1 1 1.

The pattern numbers are to be found in the "Pattern" column.

The rest of the entry's time position is not shown in the entry. So, if the start-bar says "8", it means "start this pattern when the Main Bar Counter says 8 1 1 1". If the start position of the entry is a beat later etc, the rest of the time position line will be shown in absolute values (eg "1 0 0") in the "Pattern POSITION" box *(see section 8.1)* below the list.

The start-bar number depends on the selected time signature (eg 4/4). If the signature is altered after an arrange list is installed, the start-bars will change, and so too will the entries' lengths; however what you hear remains the same. You will need to restore the lengths to their original values *(see Chapter 5: "POSITIONING", section 1.3 "Time signature")*. There are about 1350 bars available in 4/4 time.

Start-bars earlier than 1 are possible (minimum: -9).

If you want the music or count-in to start on the 1, but your current list is starts earlier, simply move the whole list later by the necessary bars *(see section 8.2 "Pattern LENGTH" below)*.

The pattern number is always to be found in the "PATTERN" column.

3. Start-bar and pattern number

4. Inserting entries

To insert entries into the list, you drag them out from each other, like "track copy": drag an entry downwards in the arrange list to copy it (holding it by its name) *(see also section 6 "Song Stop")*.

Once copied, start-bar, name and pattern number can be changed at any time, so it is irrelevant which entry is used as a "source", unless you wish to copy a particular pattern for repetition etc: the entries are merely instructions for the "arrange list sequencer" to change patterns by remote-control.

If you drop the entry on top of an existing one, it will be inserted at that position, and the existing one and all the ones after it will be moved later by an amount equivalent to the new pattern's length, to make space for it.

Once the new entry is in place, you can change its arrange list length by using its "Pattern LENGTH" box below the list.

If its length is correct, but you want it to start earlier or later, use the previous entry's "Pattern LENGTH" box to shorten or lengthen the previous pattern, for that is what you are saying. Do not touch the new entry's start-bar: you will be able to make it start earlier or later, but then its length will be wrong.

If you drop the entry beyond the last entry in the list, it will be positioned 4 bars later than the last entry.

To delete an entry from the arrange list, drag it into the right half of the screen and release the mouse button; or, press 'Delete' with the arrange cursor on the entry to be deleted.

Deleting an entry has the effect of "telescoping" or shortening the list by a length equivalent to that of the deleted entry.

So if you delete an entry that was 4 bars long, all the following entries will move earlier by 4 bars to fill the space.

Pattern "0" (zero) acts as a stop command to the sequencer.

Pattern zero's start-bar marks the point at which the sequencer will stop, so insert an entry containing pattern zero at the end of your arrange list. You will notice that pattern zero is already called "STOP", so its name in the arrange list will also be "STOP".

Tip: you may, when building up your arrange list, like to begin by inserting an entry with pattern zero after the initial "default" entry that is always in the list: then drop the other entries (see section 4. above) on top of the pattern zero entry. This has the advantage of keeping the copied entries' original lengths.

5. Deleting entries from the arrange list

6. Song Stop

Arrange Modus

So, to have a series of 8-bar patterns (prior to giving them new numbers etc):

— *drag out an entry from the top entry and drop it underneath; the top entry's length defaults to "4 0 0 0", the new one says "No Limit".*
— *change the new entry's number to zero;*
— *place the cursor back on the first entry and change its length to "8 0 0 0" in the "Pattern LENGTH" box below;*
— *drag out more entries from the top one, dropping them on top of the next entry down. This keeps all the lengths at 8 bars, and keeps pattern zero at the end of the list.*

7. Positioning the arrange list

Every entry can be clicked with the mouse.

Function keys 'F1' and 'F2' move the arrange cursor up and down the list without affecting the Main Bar Counter.

This can also be done with the mouse by clicking the small arrow icons below the arrange list.

With the arrange mode on, clicking "START" starts the sequencer from the beginning of the cursored entry. Clicking "STOP" twice resets the Main Bar Counter and sends the arrange cursor back to the first entry.

Clicking the "CATCH" icon below the arrange list or pressing 'L' ensures that the arrange cursor scrolls according what the music is doing, ie according to the Main Bar Counter position.

Whenever you start, Catch mode is always automatically enabled.

Clicking anywhere in the arrange list during playback disables Catch mode so that the cursor remains on the current entry even if the music continues.

This allows you to edit etc while the music is playing.

Clicking "CATCH" again makes the cursor catch up with the Main Bar Counter.

"Freeze arrange cursor": pressing 'Shift-L' at any time disables Catch mode. It will remain disabled until you press 'L'.

In some situations, for example where you are working with long patterns in the arrange list, it is useful to keep the cursor on the entry you are working on, something not normally possible since Catch mode is usually re-enabled with every Start command.

7.1 "CATCH" mode

7.2 "CUE"
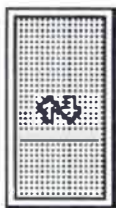
By keeping the left mouse button depressed on the CUE icon, you can move the arrange cursor up and down the list by sliding the mouse backwards and forwards.

This is a "power" version of the 'Fl'/'F2' keys *(see above)*, and is used for moving quickly around the display. While the mouse button remains pressed and the mouse pointer looks like a cross, the mouse pointer can stray from the CUE icon.

By keeping the right mouse button depressed on the CUE icon, you start the sequencer from the beginning of the cursored entry; moving the mouse back and forth changes the tempo, which then returns to where it was when you release the mouse button.

This is a very convenient way of starting and stopping NOTATOR ALPHA, and works in an identical way to the CUE function in the event editor.

Each separate entry in the arrange list has two para-
meters ("Pattern POSITION" and "Pattern
LENGTH"), which show the cursored entry's values.
They are "playback" parameters that are reversible
and non-destructive.

The "start-bar" shows where the pattern starts in the
arrange list *(see section 3):* the rest of the entry's time
position is shown here in "Pattern POSITION".

If the start-bar is exactly on the barline, there will be
no additional value in "Pattern POSITION" because
"Pattern POSITION" shows any "offset" relative to
the barline; this can be a delay or an advance. So, if
an entry starts at the Main Bar Counter's "8 2 1 1",
the start-bar will say "8" and the "Pattern POSITION"
will say "1 0 0", which means "add 1 beat to the start-
bar's position" ie "8 2 1 1".

The normal state of the "Pattern POSITION" box is
blank because it is most unusual for an entry ever to
have a delay: the norm is for entries to start on the bar
line.

The starting point of an entry can be delayed or ad-
vanced by clicking the "Pattern POSITION" box with
one or other mouse button; however you are advised
never to touch the "Pattern POSITION" parameter.

There are almost no situations where you would ever
wish to make an arrange entry have a delay. However,
this display is useful because it shows when there are
problems: if you see that an entry has acquired a delay
it is because an earlier entry has an incorrect length,
so you must go back through the list to the source of
the delay and correct it.

8. Pattern parameters

8.1 Pattern Position

```
                    /768
Pattern POSITION
```

A value will appear as a result of an earlier entry's length changing: introducing time signature changes into a song whose arrange list is already established will result in entry length changes: simply go back through the list, re-establishing the correct lengths till the delay values have gone. Do not touch the delay values themselves *(see also Chapter 5: "POSITION-ING", section 1.3 "Time signatures")*.

8.2 Pattern Length

Altering an entry's "Pattern LENGTH" value (below the arrange list) determines the length of the current entry and moves all entries that follow it in the same chain.

<u>Always</u> alter entries' lengths with this parameter, <u>never</u> with each entry's start-bar.

"Pattern LENGTH" is a "playback" parameter that does not affect data: a pattern might actually have 20 bars in one of its tracks, but if the entry's length is "4 0 0 0", only the first 4 will be heard. Vice versa, too: if a pattern contains 4 bars of music but its entry is given a "length" value "20 0 0 0", you will have 16 bars' silence after the first 4 bars!

"Pattern LENGTH" will read "No Limit" if the entry is the last one in the list (this is because there is no entry below it to stop it). Any music in the pattern could carry on for as long as you liked.

Tip: introducing time signature changes into a song <u>after</u> you have already assembled the arrange list will always result in pattern length changes (producing unexpected start-bar and Pattern POSITION values). This is bound to happen (see Chapter 5: "POSITION-ING", section 1.3 "Time signatures"), but easy to correct: each time you introduce a time signature, correct the lengths of the entries throughout the list. Note: it makes sense to introduce time signatures changes before assembling the arrange list .

Recording is possible with the arrange mode switched on; there are no limits to what you can do.

When you are in record mode, the program keeps you in the current track, whatever the song is doing in the arrange list: it can be switching entries as the song progresses (you will see the arrange cursor move up the entries in the list), but you are quite safe: you will stay in your record track. The recording does not jump from entry to entry with the arrange cursor.

When you go into record mode with the arrange mode on, the count-in means the program will start one bar back (this depends on the count-in) so that you will hear what is in the song as well as the normal metronome "click".

It is important to ensure you are in the right track before entering record mode: so long as that is correct when you enter record mode, then even if the arrange cursor is in the wrong place, no harm will come of it.

In the event list, the time positions of recorded notes and other events are always related to the "1 1 1 1" of the current pattern, not to the "1 1 1 1" of the arrange list.

If you record a track in a pattern which has been entered into the arrange list at various points, the piece which you have recorded will, of course, also play at those various points.

The length of a pattern is as long as its longest track. In practice, though, the length is determined by the "Pattern LENGTH" value: so even if you recorded 20 bars of solo while the song was playing, if the entry's "Pattern LENGTH" value is "8 0 0 0", the arrange list will play back the first eight bars only.

9. Recording in the arrange mode

Arrange Modus

Simple recording:

You can approach the recording of a song in one of two ways. We will assume that a pattern represents a song section (verse, chorus etc):

1. Record each pattern separately then assemble them afterwards in the arrange list.
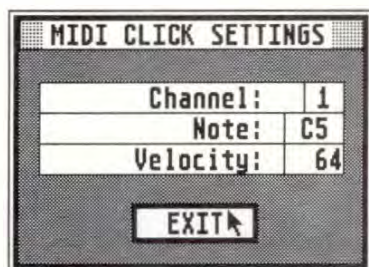
or

2. Assemble a chain of entries containing as-yet empty patterns. Enter the desired pattern numbers and lengths (if known). You now have a "dummy song" ready to record notes which you may like to save as part of your "AUTOLOAD.SON" *(see Chapter 20, section 2.3)* for future work.

Now place the arrange cursor on the desired entry, place the track cursor on the desired track and click "RECORD"; you hear the last bar of the previour entry (if it contains any music) as count-in (as well as the metronome), then start recording the music. If you are in the middle of recording an 8-bar bassline, and you previously set the pattern's length to "4 0 0 0" in the "Pattern LENGTH" box, don't worry: the arrange list will scroll to the next entry but you can continue recording the bassline. When you have finished, you will need to increase the length to "8 0 0 0" to be able to hear it all.

Remember: the pattern parameters are "playback" parameters that can be altered at any time without affecting the data.

The metronome during Record mode (including count-in) can be heard by turning up the Atari monitor's loudspeaker. It is often too quiet for certain situations. It is therefore possible to send the metronome to any MIDI instrument as a short note: the "MIDI Click" *(see also Chapter 7: "RECORDING", section 1)*.

```
╔═══MIDI CLICK SETTINGS═══╗
║                         ║
║   ┌─────────────┬─────┐ ║
║   │    Channel: │  1  │ ║
║   │       Note: │ C5  │ ║
║   │   Velocity: │ 64  │ ║
║   └─────────────┴─────┘ ║
║                         ║
║        ┌─────────┐      ║
║        │  EXIT▶  │      ║
║        └─────────┘      ║
╚═════════════════════════╝
```

Left-clicking the black beam in the "MIDI THRU" box below the pattern window or clicking "Set MIDI Click" in the "Options" menu opens the "MIDI CLICK SETTINGS" window.

You may select the MIDI Channel, the pitch and the velocity of the note.

The MIDI Click may be switched on/off with "MIDI Click" ("Options" menu).

"Play Click" ("Options" menu) switches the MIDI Click on/off when in Playback mode; it defaults to "off".

1. MIDI Click in Record and Playback

```
┌─Options──┐
│          │
├──────────────┐
│ Set MIDI Click▶│
│√ MIDI Click  │
│  PLAY Click  │
│ -SEND TO MIDI:- │
│              │
└──────────────┘
```

2. MIDI Reset messages
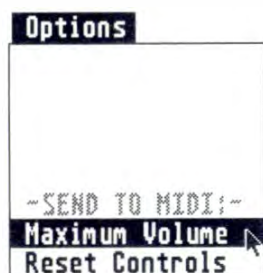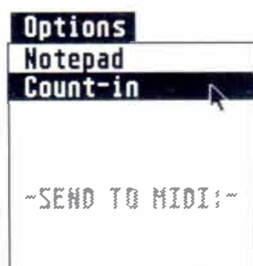
The "Options" menu allows various MIDI messages to be sent to the MIDI devices connected to NOTATOR ALPHA. Not all devices understand these messages (refer to their MIDI implementation charts).

Maximum Volume: switches all devices to maximum Volume (Controller 7, value "127"). If ever a device is strangely quiet for no apparant reason, try clicking this option. "Maximum Volume" is not part of the general "Reset Controls" command.
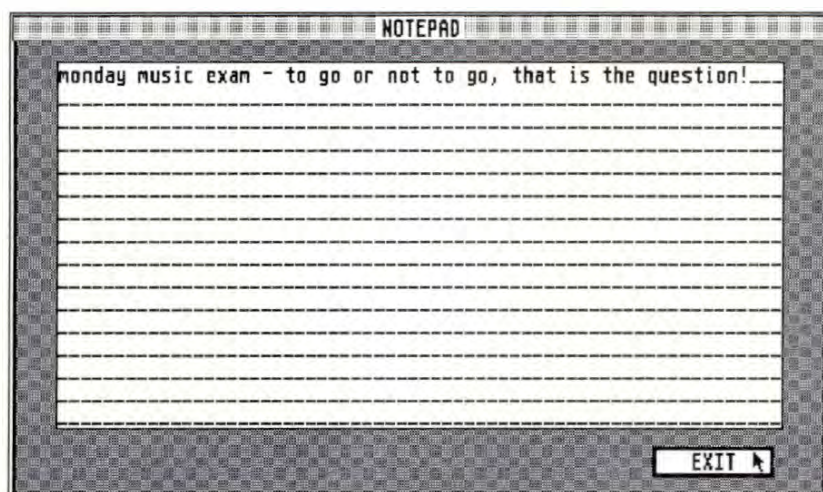
Reset Controls: resets the receiving devices' Pitch Bend, Modulation Wheel, Channel Pressure, Sustain footswitch (MIDI Controller 64) etc, and sends an "All Notes Off" message to stop any droning note (it is often quicker to use the 'Help' key or to press the "Stop" key ('Enter') twice).

3. Count-in

The length of the recording count-in can be altered under "Count-In" ("Options" menu) *(see also Chapter 7: "RECORDING", section 1)*.
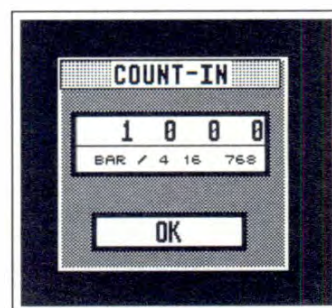
The display is expressed in the usual bar, beat etc form, eg "1 0 0 0" means exactly one bar's count-in. Store the length in the "AUTOLOAD.SON" *(Chapter 20: "DISK OPERATIONS", section 2.3)*.

Click "Notepad" ("Options" menu) to open the Notepad. The notepad is saved to disk as part of a song.

```
▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓ NOTEPAD ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓
 monday music exam - to go or not to go, that is the question!___
 ────────────────────────────────────────────────────────────
 ────────────────────────────────────────────────────────────
 ────────────────────────────────────────────────────────────
 ────────────────────────────────────────────────────────────
 ────────────────────────────────────────────────────────────
 ────────────────────────────────────────────────────────────
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 ────────────────────────────────────────────────────────────
 ────────────────────────────────────────────────────────────
 ────────────────────────────────────────────────────────────
 ────────────────────────────────────────────────────────────
 ────────────────────────────────────────────────────────────
                                              EXIT ▐
```

Use it to make notes about your song etc. 'Esc' deletes a line.

The 'Help' key resets the MIDI instruments and stops droning notes *(see section 2 above)*.

5. Keystroke: 'Help'

At the far left of the "information bar" that runs along the top of the screen is a box marked "FREE". It shows, approximately, the free amount of space left in the computer's RAM, expressed in events.

6. "FREE" display

40717
FREE

Whenever data is recorded, it removes some of those free events. Also, when you play data in without recording, you will see this counter scroll down, indicating that MIDI information is reaching the program.

The tempo display is in the "TEMPO" box in the "information bar" over the top of both the main page and event editor. It can be set from 25 to 250 beats-per-minute (bpm).

The tempo is valid for the entire piece of music in the sequencer if there are no "tempo changes" made by "P_USER 1" events (see below).

Pressing 'T' opens a Dialog box, where you can enable the recording of tempo changes via the screen with the mouse.

To do this, click an empty track, click "RECORD" and alter the tempo display using the mouse. You can also use the 'Control'+ mouse feature *(see Chapter 3: "GENERAL HANDLING", section 1 "Mouse")*.

Tempo changes are recorded as "P_USER 1" (absolute tempo) events in the current track.

The following functions do not affect the tempo display. Instead, they alter the relationships of note positions.

The "Double Speed" function ("Functions" menu) halves the distance between notes, resulting in the track playing at twice the speed.

"Double Speed", used on 1/8ths at tempo 120 does not play the 1/8ths at 240bpm, but alters the notes to 1/16ths (still at tempo 120).

Tip: try playing in an arpeggio in 1/8ths, then use "Double Speed" once, then once again. This results in a 1/32nds arpeggio.

1. Song tempo

120
TEMPO

2. Recording tempo changes

Control +
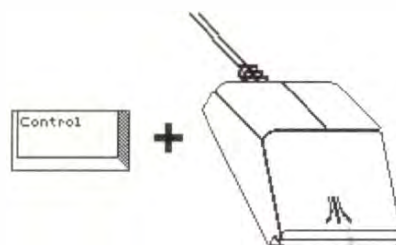
3. Quasi "tempo changing" by altering notes' time positions

Functions
Double Speed
Half Speed

3.1 "Double Speed"

3.2 "Half Speed"

The "Half Speed" function ("Functions" menu) doubles the distance between notes, resulting in the track playing at half the speed.

Because the track doubles in length, tracks which are already very long may go over the maximum allowed number of bars (approx 1350).

While you are working with NOTATOR ALPHA, all recorded data is temporarily held in the computer's Random Access Memory, or "RAM". If the computer's power supply is switched off or interrupted even for a split second, the contents of the RAM will be lost forever. You should therefore regularly save the RAM contents to disk for more "permanent" storage.

The program's disk operations are in the "File" menu. These concern the saving and loading of your work in the form of "files" in a format recognizable to NOTATOR ALPHA. A disk must be "formatted" *(see section 6)* before it can accept files.

A file is given an 8-character name by you before saving, which allows it to be recognized again.

All files have an three-letter "extension" after the name which identifies them to you and the computer as being of a particular type. File extensions are always shown with a "." before them, and we use the convention of placing a "*" before the "." to mean "any filename with that extension". The most common are:

*.SON: a global file containing all SONG data
*.BON: a "backup song"
.SEQ: a single track (.BEQ: "backup track")
        ("SEQ" = "sequence")
.MID: a Standard MIDI File (.BID: "backup MIDI File").
*.PRT : a printer adaptation

Never remove a disk from the drive while the "drive light" is illuminated — to do so would be to risk losing information on the disk, or risk damaging the drive mechanism.

1. Data organization disk, "files"

files:

ART.PIC   LOSTLOVE.SON

programs:

ALPHA.PRG   NOTATOR.PRG

folders:

SONGS.ALL   PRINTER

1.1 The Atari File/ Item Selector

During all disk operations a dialog box appears, called an "Item Selector" or "File Selector" depending on your computer version.

```
┌─────────────────────────────────────┐
│                                      │
│  FILE SELECTOR                       │
│                                      │
│  Directory:                          │
│  A:\*.*_____      │
│  ┌─────────────────┐                 │
│  │▓        *.*     ▓│  Selection:     │
│  │   AUTOLOAD.SON  ⇧│  ┌──────────┐   │
│  │   --------.---   │  │_____.___│  │
│  │   --------.---   │                 │
│  │   --------.---   │        ▶        │
│  │   --------.---   │                 │
│  │   --------.---   │                 │
│  │   --------.---   │   ┌──────────┐  │
│  │   --------.---   │   │    OK    │  │
│  │   --------.---  ⇩│   ├──────────┤  │
│  └─────────────────┘   │  CANCEL  │  │
│                        └──────────┘  │
└─────────────────────────────────────┘
```
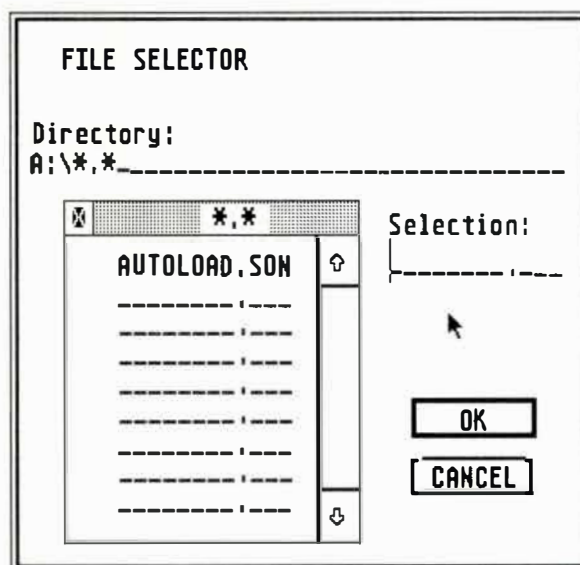
The Atari File/Item Selector, which is pretty basic, can be replaced by "Accessory" programs which allow far more operations to be conducted from the Selector, though the later Atari TOS 1.4 Selector at least allows the disk drive to be selected easily.

```
┌─────────────────────────────────────┐
│            ITEM SELECTOR             │
│  Directory:                          │
│  A:\*.SON_____   │
│  Selection: ┌──────────┐             │
│  ┌─────────────────┐  DRIVE:         │
│  │▓       *.SON    ▓│ ┌───┬───┐       │
│  │                  │ │ A │ B │       │
│  │ ▓ PRINTER_.___  ⇧│ │ C │ D │       │
│  │   --------.---   │ │ E │ F │       │
│  │   --------.---   │ │ G │ H │       │
│  │   --------.---   │ │ I │ J │       │
│  │   --------.---   │ │ K │ L │       │
│  │   --------.---   │ │ M │ N │       │
│  │   --------.---   │ │ O │ P │       │
│  │   --------.---   │ └───┴───┘       │
│  │   --------.---  ⇩│ ┌───────┐       │
│  └─────────────────┘ │  OK   │       │
│                      ├───────┤       │
│                      │ CANCEL│       │
│                      └───────┘       │
└─────────────────────────────────────┘
```
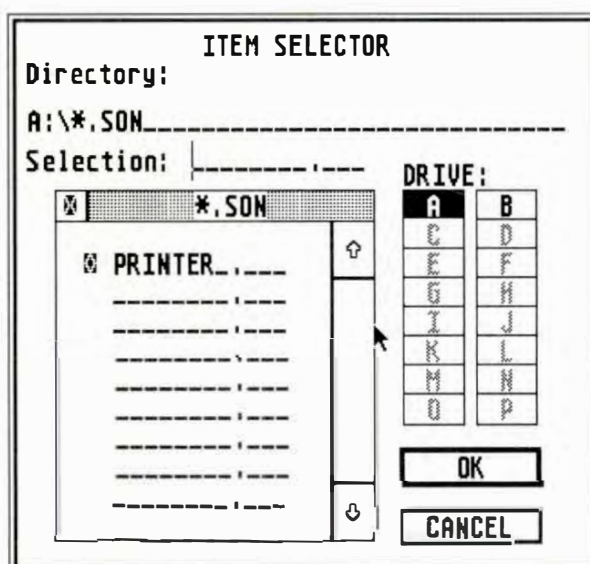
The Selector is part of the Atari's operating system and is therefore identical whatever type of file you are saving/loading.

In the left half of the Selector is the file list, which shows files that are on the disk in the current drive. The list always defaults to showing *only files of the relevant extension*: if you click "Save SONG", the Selector will show *.SON files only, even though the disk may contain many other types of files, including *.BON files. Folders on the disk are also shown — *see below*.

Additionally, the program names the operation you are doing at the top of the screen: always ensure this is correct before going ahead.

The list can be scrolled to show more names if necessary: click the "down-arrow" in the bottom right corner.

When loading, a file is selected by finding it, then double-clicking it in the list; or clicking it once so that it appears in the "Selection" line, then clicking "OK".

When saving, type the file name in the Selection line then click OK. So long as the list is showing the correct extension in the grey bar above, the extension does not have to be typed again (though you may like to do so to play safe). All characters are in capital letters (no need to press 'Shift'). Spaces are not allowed, but you may use 'Shift hyphen' and 'Shift colon'. If the name is shorter than 8 characters, type the '.' after the last character and the cursor jumps to the extension part.

If your song, sequence etc already has a name, this name will automatically appear in the Selection line.

Selection:
SONG____.SON

⟶ ◊ FOLDER_N.AME
--------- ' ---

Directory:
A:\ALPHA*.SON___
[X] ▦ ▦ *.SON ▦

If the disk contains "folders" (which contain more files), these will also be shown in the list, whatever the file extension. A folder has a special "diamond" symbol before and to the left of its name. Click the folder to see what files and other folders are inside it.

The "Directory" or "Path" line above the list is very important. It always shows the "path" which you have followed to get to that position on the disk which the list is showing.

The Directory line is not as confusing as it looks:

— The first letter character shows the current drive. The drive letter is always followed by a ":" which means "drive". So, "A:" is the in-built drive A.
— The next character is the backslash "\" which means "what follows is in the "root directory" (ie what is immediately visible and not in a folder). If there is another "\" after a name, whatever is between the backslashes is in a folder.
— After the "\" comes either the folder name if open, or the "*", which means "I am displaying files of any name".
— Lastly, the extension is shown as a "." followed by 3 characters. Instead of the 3 characters, there may be a "*", meaning "I am displaying files of any extension".

The Directory line can be directly edited: click it so the Selector cursor moves up, then use 'Esc' to delete the whole line, 'Backspace' or 'Delete' and the cursor arrows. With the above knowledge, you can request your own "path". If you type:

A:*.*

you are saying: "show what is on the drive A disk, whatever the filename, whatever the extension (ie show everything). If you type:

C:\PRINTER*.PRT

you are saying: "show what is in the hard disk partition C, in the PRINTER folder, whatever the filename, but only files with the extension ".PRT"".

To *carry out* the command, click in the grey bar above the list. To close folders, click the list's "close box" in its top lefthand corner.

Directory requests may be carried out whatever "File" menu function you clicked: if you clicked "Load SONG", but wish to see all the files on the disk, use 'Backspace' to delete the .SON extension and replace it with .*, followed by clicking the grey bar (this is how to find and load a *.BON file, for instance).

More recent Atari ST Selectors have additional drive boxes which you click to select a drive, and sophisticated Selector accessory programs have pre-programmed extension boxes, too.

For more information see your Atari ST operating manual.

2. Save/ Load Song

File
Load S O N G
Save S O N G

Alternate S

To save a song to disk, click "Save SONG" ("File" menu) or press 'Alternate-S'. To load a song from disk, click "Load SONG".

These two functions are the two most important "File" ones, as they save/load the entire contents of the program.

Always save your work using "Save SONG", even if you have only used one pattern: as well as all the music, this saves the tempo, time signature etc.

Save your work regularly to disk, especially after recording or editing music that you would hate to lose if there was a power failure.

A loaded song will replace (delete) the current one in the RAM (or its current version), so ensure this is what you wanted to do before clicking "OK".

If you save a song, and the song's name is already displayed in the "Selection" line (because you previously loaded or saved the song), click "OK".

If a file with the same name and extension is already on the disk, the program will tell you that a file by that name exists, and ask you whether you want to rename that file on disk so that it has a .BON extension or whether you want to delete the file on disk.

FILE EXISTS!

RENAME old to SONG.BON
or DELETE old version?

[Cancel] [Delete] [RENAME]

Always respond by clicking "RENAME": this keeps the file already on disk (but gives it a .BON extension), and saves the current one with the .SON extension. That way, there is always a safety backup on the disk, allowing you to go back one version if you made a mistake.

(You could give a new name to the same song each time you save it, thereby keeping each version (eg "MYWAY1.SON", "MYWAY2.SON", MYWAY3.SON etc) but you would soon run out of space on the disk.)

If the computer alerts you to the fact that there is no space left on the disk, you should either save onto a fresh formatted disk, or delete a file *(see section 5 "Delete File")*.

NOTATOR ALPHA ".SON" files are compatible with the C-LAB NOTATOR and CREATOR programs!

If you are loading a NOTATOR song file please be aware that some NOTATOR functions cannot be transferred to ALPHA e. g. the arrange change b,c,d or some track parameters.

There is no guarantee that your disks will not corrupt and lose data while in storage.

Golden rule: if you work with computers, always make copies of your important disks and store them separately.

A few seconds spent making a backup copies of your files on separate disks at the end of the working day is time well spent.

2.1 Backup disk copies

There are many reasons why a file can sometimes not be read by a program, but following the advice in this manual should minimize the risk of avoidable file corruption.

Rarely, if a file cannot be accessed, it may be that the disk drive which saved it was out of alignment. It reads its own disks, but not those of other computers; and other computers cannot read its disks.

Do not be tempted to use "unbranded" disks because they are cheaper. This is a false economy as they tend to be less well examined by the manufacturer than well-known brands.

2.2 Handling disks

Disks are sensistive to magnetic, mechanical and thermal influences: loudspeakers, power supplies, dust, babies, Coca Cola etc. Carry them in special disk boxes or wallets and do not leave them lying around in the sunlight or on top of the computer.

2.3 "Autoload Song"

There is a method of defaulting the program with a user's favourite parameters and functions when it loads.

If a file called "AUTOLOAD.SON" is present <u>on the program disk</u> it will be auto-loaded whenever NOTATOR ALPHA are started.

Hard disk users: AUTOLOAD.SON must be in the same partition/folder as the program.

To create an AUTOLOAD.SON: load the program, set your defaults *(see throughout manual for details)* such as Channel names, MIDI Click settings etc, en-sure the program disk is in the drive, select "Save SONG", type AUTOLOAD.SON in the "Selection" line and click "OK".

NOTATOR ALPHA may come with an AUTO-LOAD.SON already on the disk: this can be edited to your configuration and saved again. Do not use any other name than "AUTOLOAD.SON".

To save a track to disk, click the track then click "Save Sequence" ("File" menu). To load a track from disk, click an empty track location then click "Load Sequence".

For details, read section 2 "Save/Load Song", replacing references to the song with those of a track.

4. Standard MIDI Files

4.1 Standard MIDI File formats

Standard MIDI Files are a more-or-less-standard data format which are designed to enable data created on different manufacturers' MIDI sequencers to be transferred between programs. NOTATOR ALPHA supports Format 0 and 1.

Format 0:   one track containing an unlimited number of events on all 16 Channels.

Format 1:   for several parallel tracks containing an unlimited number of events on all 16 Channels.

Only information that is in the current pattern, whether it contains 1 or 16 tracks, is saved as Standard MIDI File.

NOTATOR ALPHA will *save and load* in the Standard MIDI File format:

— the full high resolution of 1/768th notes
— all MIDI Channel data (Notes, Pressure, Control...)
— SysEx messages without Handshakes
— Track name (handled as first text event in the track)
— Text events
— Tempo
— Time signature

The following information cannot be recognized by a Standard MIDI File:

— any track parameters (Transpose, Velocity...)
— Channel and pattern names
— any P_USER events (except for Tempo and Text)
— Graphical symbols (slurs, accents, dynamic symbols...). NOTATOR user-rests are in fact notes at the extrem ends of the MIDI range, ie MIDI note number 0 or 127, so please delete them before you save as a Standard MIDI File, otherwise the receiving program will play these as normal notes.

Note: the data format of Standard MIDI Files is not fully developed, so there may be incompatibilities.

To save the current pattern to disk in the Standard MIDI File format, click "Save MIDI File" ("File" menu). To load a Standard MIDI File from disk, click "Load MIDI File".

The current pattern is saved as Format 1. If it contains only one track, this track is saved as Format 0 (some sequencers can read only Format 0).

Standard MIDI Files should be used only when transferring files to or from other manufacturers' sequencers.

For details, read section 2 "Save/Load Song", replacing references to the song with those of a MIDI File.

To delete a file on disk, click "Delete File" ("File" menu).

This deletes only what is already on disk, not what is in the computer's RAM. The File Selector displays every file and backup file. A message will ask you whether you wish to proceed with the deletion: if "OK", the file is gone forever!

4.2 Save/Load MIDI Files

5. Delete File

6. Format Disk

To format a disk, click "Format Disk" ("File" menu).

Before first use, a new disk must be "formatted" by the computer to conform to the Atari way of storing information. This erases any data that might already be on the disk, so double-check that you want to format it.

The dialog box asks whether you wish to format "SINGLE" or "DOUBLE": always click "DOUBLE" as this maximizes use of the disk (both sides).

```
┌─────────────────────────────────────┐
│      FORMATTING WILL DELETE          │
│(STOP)  EVERYTHING ON DISK A!         │
│                                      │
│                                      │
│    [ Cancel ]   [    OK    ]         │
└─────────────────────────────────────┘
```

```
┌─────────────────────────────────────┐
│           FORMAT DISK IN DRIVE A     │
│  (!)      Use 'DOUBLE' if possible   │
│                                      │
│                                      │
│   [CANCEL] [SINGLE] [DOUBLE]         │
└─────────────────────────────────────┘
```
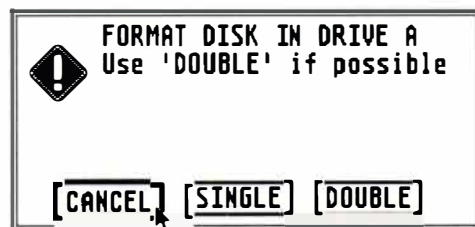
Do not attempt to format disks that were once for-
matted and used on other devices (samplers etc). Al-
ways keep a good supply of branded, formatted disks
available.
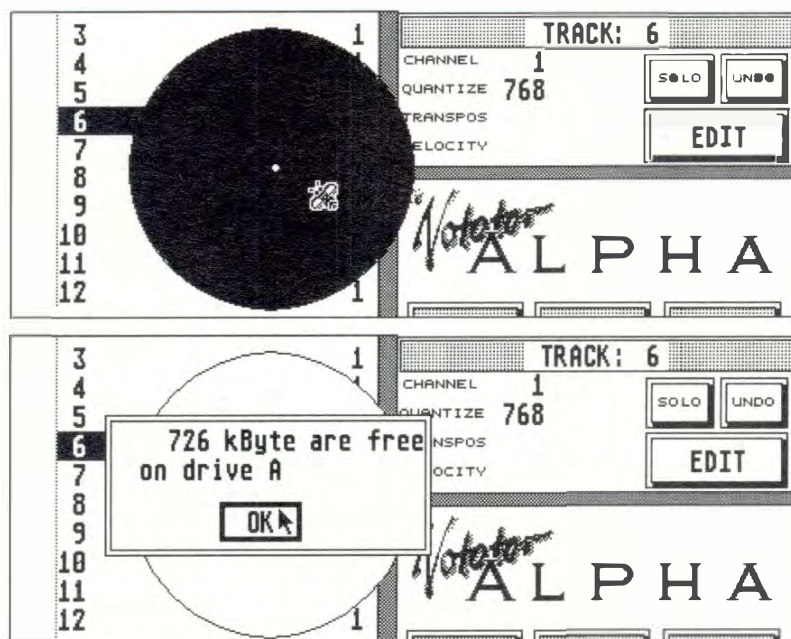
7. Quit

Clicking "Quit" at the bottom of the "File" menu asks
you whether you want to exit from NOTATOR AL-
PHA and revert to the "GEM desktop". This destroys
all your music data, so make sure you have saved it to
disk first.

NOTATOR ALPHA functions can basically be divided into two types:

1. "Event-altering" functions that alter events in the computer's memory. Because of this alteration, the result of using an "event-altering" function can be seen in the event editor. The result of using an "event-altering" function can be reversed by using the function to do the opposite, but sometimes even this is not possible: it depends on the function, on its complexity, and on the scale of the alteration that was made.
2. "Playback" functions that do not alter events in the computer's memory, but alter them as they pass, "live", through the MIDI Outputs when they are played. Because of this, the result of using a "playback" function cannot be seen in the event editor (the event editor can only show what is in the memory).

"Playback" functions have the advantage of being immediately reversible, with the guarantee that the original data has not been touched.

1. Some NOTATOR ALPHA concepts

1.1 "Playback" versus "event-altering" functions

Appendix

As many functions as the computer allows are "playback" functions. Every visible value on the main page is a "playback" function *(QUANTIZE excepted — see Chapter 15: "QUANTIZATION")* including the arrange mode. The overall ease of handling of data in the arrange mode and the resulting reduction in the use of memory are other advantages of "playback" functions *(see also Chapter 6: "TRACKS", Chapter 17: "ARRANGE MODE")*.

1.2 What can be recorded?

All MIDI Voice (Channel) messages (Note On, Note Off, Pitch Bender Change, Channel Pressure, Poly Pressure, Control Change, Program Change) and System Exclusive *(see Chapter 8: "TYPES OF EVENT")*.

NOTATOR ALPHA also transmits MIDI System Realtime and System Common data (eg MIDI Clock, START, STOP, CONTINUE, and SONG POSITION POINTERs): these are not user-editable.

2. Notation display P_USER events

58:	Guitar Tabulature.
59:	Chord Symbol
60:	Text
61:	Lyrics
62:	Dynamic signs
63:	Segno
64:	Slurs
65:	Crescendi
66:	Trills
68:	Repeat Bar
69:	Rests of more than one bar
73:	Arpeggio
74:	Tempo sign
80/81:	Clef change upper/lower stave
82/83:	Key change upper/lower stave

Effect	Parameter
Whole song	Sloping beams
	"Minimum distance"
	Alternative 4/4 and 2/2 symbols
Global	Time signature
	Double Bars
Per track	Key signature
	Clef
	Display format or quantization
	Interpretation mode
	Vocal Mode (no beams)
	Stem direction
	Stem hide
	Split stave/Split point
	Polyphonic Mode
Regional	Key signature change
	Clef change
	Time signature change
Local	Enharmonic shift
	Note heads
	Beaming
	Stem direction
	Graphical microshifting of notes
	Force accidental

3. Notation display parameters and their effects

4. Glossary of terms used in manual

Alert box: a message which automatically appears on the screen to warn you of something, eg if you try to delete the last remaining entry in the arrange list, you are told you cannot do this.

Byte: part of a MIDI event *(see Chapter 4: "DEFINI-TIONS", section 1, Chapter 8: "TYPES OF EVENT" and Chapter 9: "EVENT EDITOR", section 4).*

Calculator Keypad: the block of keys on the right of the computer which looks like a calculator.

Current: as in "current track/pattern/event" etc. The item which is under the cursor.

Cursor: the black rectangular box which moves about the screen highlighting values, parameters etc. For example, the track cursor shows which is the "current" track by moving up and down the pattern window; the event list cursor highlights various parts of an event, etc. Values under the cursor may be altered by using the '+'/'-' keys. In the score editor, the cursor makes the current object blink on and off.

Data byte, first/second: a MIDI event consists of up to four smaller packets of data. The "status byte" contains information on the event's own Channel and its "Status" (what it is, Note, Control etc). The "first" and "second data bytes" tell us more about the status (eg, if it is a Note, what the pitch is and its velocity). *(See Chapters 8: "TYPES OF EVENT", 9: "EVENT EDITOR".)*

Default: the setting which the program comes set to; the "resting" value.

Dialog box: these are produced by some functions in the screen, and they ask you to do something, eg clicking the "EDIT" icon on the main page when the cursor is on an empty track produces a dialog box which asks whether you wish to create a new track.

Event-altering: a function which changes the bytes of an event in the computer's memory, eg "Double Speed" or "Half Speed". *(see Chapter 21: "APPEN-DIX", section 1.1 "Playback versus event-altering functions".)*

Format: the "FORMAT" value in the "Information Bar" sets the screen quantization. To "Format" a disk is to prepare it to take information. *(See Chapter 11: "SCORE DISPLAY", section 8 "Quantizing the display".)*

Function: a process that carries out a number of commands on a number of events simultaneously, instead of you having to change each individual event manually.

Icon: an on-screen representation of a switch, button etc that does something in the program.

Information bar: the bar full of information that sits over the top of the main page and the event editor. Contains the Main Bar Counter, time signature etc.

Locator: a position which marks the start or end point of a process, Cycle etc. *(See Chapter 5: "POSI-TIONING", section 3 "Cycle mode, Locators and Autolocator".)*

MIDI Thru function: passes incoming MIDI data immediately back to the Output, and can simultaneously transpose, re-Channelize etc the data passing through. *(See Chapters 6: "TRACKS".)*

Memory: see RAM

Menu: along the top of the screen is the "menu bar", which contains "menu headings", each of which contain a list of "menu options", each of which carry out a function, open a function window, etc.

Mode: a state

Offset: a time position which is relative to the beginning. Example: in the arrange list, if a pattern starts at bar 5 it is said to be offset by 4 bars from the beginning of the song.

Parameter: a value which is part of a function or part of the program, eg a track has a number of <u>parameters</u> which it can use to affect the events inside it. These track parameters include "CHANNEL", "TRANSPOSE" etc *(see Chapter 6: "TRACKS")*. These track parameters are "Playback" parameters (see below).

Playback Parameter: a function which affects events as they are transmitted from the Output without changing the bytes of the events themselves in the memory. *(See Chapter 6: "TRACKS" and Chapter 21: "APPENDIX", section 1.1 "Playback versus event-altering functions".)*

P_USER events: are events unique to the program which deal with certain internal processes, eg score symbols, tempo etc. They are not transmitted from the program with MIDI events. *(See Chapter 8: "TYPES OF EVENT", section 7 "P_USER events".)*

RAM: the computer's Random Access Memory which temporarily stores all the data while you are working. The RAM's contents should be periodically saved to disk as its data is erased if power is interrupted. *(See Chapter 1: "INTRODUCTION", section 2.1 "Hardware".)*

Scroll: to change a value with the mouse, eg to scroll a value on the screen, place the mouse pointer on it and press-and-hold a mouse button. *(See Chapter 3: "GENERAL HANDLING", section 1 "Mouse".)*

Scrollbar/box: part of the Atari GEM environment. Various parts of the program have a scroll bar, including the score editor, the event editor page and the Item/File Selectors. The scroll bar allows you to show an earlier/later part of the function by clicking inside it or dragging the white scroll box inside the bar, where the bar represents the overall function, and the box the screen segment visible.

Segment: part of a track, eg "3 1 1 1" to "9 1 1 1" is a 6-bar segment.

Status: every MIDI event has a status which determines what type of event it is, Note, Pitch Wheel, Aftertouch etc. *(See Chapter 8: "TYPES OF EVENT".)*

Typewriter keypad: the main keypad on the computer.

Appendix

5. Keychart

(T)	Typewriter keyboard
(C)	Calculator keypad
(GB)	British keyboard
(USA)	American keyboard

MAIN PAGE

Arrange catch mode: arrange cursor moves with song	L
Arrange catch mode disabled: arrange cursor freeze	Shift L
Arrange cursor move, not affecting Main Bar Counter	Fl & F2
Arrange entry: insert new entry	Insert
Arrange entry delete	Delete
Arrange entry name	Shift Esc
Arrange pattern's start/end locators loaded + CYCLE	X
Autolocator: recall positions	F3-F10
Autolocator: store positions	Shift F3-F10
CHANNEL name: press 'Clr Home' first	Esc
CHANNEL track parameter: place cursor on it	Clr Home
Continue from Main Bar Counter position / Pause	. (Full Stop)
Cursor: move around main page	Cursor l/r
Demix All Voices	Alternate , (comma)
Event Editor	E
Event editor dialog box: initialize	Shift J
Hide track	H
Main Bar Counter: open for direct typing	` (key next to Backspace)
Main Bar Counter: scroll by bar	[ ]
MIDI reset (not Volume), All Notes Off	Help
MIDI Thru function: copy cursored track's parameters	# (GB)
Mouse becomes fader when pointed at a value	Control
Mouse buttons swap	Shift Z
Pattern name (also force-names arrange listing)	Shift N
Pattern select 0 to 99	0-9 (T)
Record with count-in	* (C)
Solo track on/off	O
Start	0 (Zero) (C)

Stop	Enter
Stop / "OK" or "EXIT" windows	Return
Track delete	Backspace
Track initialize	Shift Backspace
Track name	Shift Backspace
Track select	Cursor up/down
Track select: 10 to 16	LeftShift 0-6 **(C)**
Track select: 1 to 9	1-9 **(C)**
Undo previous event-altering operation	Undo
Value under cursor up/down	+ / - **(C)**
Value under cursor up/down in 10's	Shift + / - **(C)**

EVENT EDITOR

Autolocator: recall positions	F3-F10
Continue from Main Bar Counter position / Pause	. (Full Stop)
Cursor: move within event line	Cursor l/r
Delete event marked for deletion; then 'Space'/'E	Delete
Deletes events marked for deletion by 'Delete key	Spacebar
Graphic display in event list on/off	G
Insert mode	Shift I
Inserts MIDI Control event into event list	Insert
Inserts note event into event list	Shift Insert
Locators: first/last event times in Segment Copy etc	F1 & F2
Main Bar Counter: open for direct typing	` (key next to Backspace)
Main Bar Counter: scroll by bar	[ ]
Main Page	E
Main page / "OK" or "EXIT" from windows	Return
MIDI reset (not Volume), All Notes Off	Help
Pickup Clock: forces Main Bar Position onto event	/ **(C)**
Position: Catch mode cursor keeps up with events	L
Position: jump to first event in track	Clr Home
Position: jump to last event in track	Shift Clr Home
Position: scroll event list by page	Shift Cursor up/dn
Position: scroll event list up/down	Cursor up/down
Position: start/stop sequence from current event	\ **(USA)**

Position: start/stop sequence from current event _____ # (GB)
Quantize cursored event _____ Q
Record with count-in _____ * (C)
Score editor open/close (NOTATOR) _____ N
Solo track on/off _____ O
Start _____ 0 (Zero) (C)
Stop _____ Enter
Text P_USER 60 insert / edit existing text _____ Esc
Value 0 where 0 is first value (avoids starting) _____ LeftShift 0 (C)
Values for typing _____ 1-0 (C)
Value under cursor up/down _____ + / - (C)
Value under cursor up/down in 10's _____ Shift + / - (C)

NOTATION

Accidentals: Confirmation Accidentals on these notes _____ Shift Alternate H
Beam: restore auto-beaming to selected notes _____ Alternate B
Beam: un-beam selcted notes _____ Shift B
Beam selected notes _____ B
Delete selected events _____ Backspace
Enharmonic shift down for selected notes _____ H
Enharmonic shift up for selected notes _____ Shift H
Enharmonization: restores original _____ Alternate H
Full score mode on/off _____ U
Global Display Parameters window _____ Shift X
Interpretation mode on/off _____ I
Lyric mode steps to next note/rest position _____ Tab
Note Extension delete _____ Shift Alternate E
Page Preview _____ P
Polyphonic Voice 1-4 in partbox _____ Shift 1 to 4 (T)
Polyphonic Voice change for selected notes _____ Alt. 1 to 4 (T)
Note value selection in partbox _____ 1-6 (T)
Parameter Mode window: track's own display values _____ X
Position: Catch disable freezes score cursor on/off _____ Shift L
Position: scroll stave in bars _____ ( ) (C)
Position: scroll stave in beats _____ Shift ( ) (C)
Position: scroll stave in display format units _____ Alternate ( ) (C)
Print: "quick print" _____ Shift P

Rests: convert selected notes into user-rests _____ Alternate R

Rests: hold while entering notes _____ Alternate

Split (double) stave on/off _____ S

Split Voice of notes by pitch: for Polyphony _____ Alternate S

Stem: restore auto-stem direction / hidden stems _____ Alternate D

Stem down for selected notes _____ D

Stem up for selected notes _____ Shift D

Syncopation display off _____ Shift-W

Syncopation display on _____ W

Text P_USER 60 enter / edit existing text/lyrics _____ Esc

Vertically aligns all following identical objects _____ Shift F

Vertically aligns next identical object _____ F

Vocal display: removes all beams _____ V

INDEX

Chapters are shown in bold type, followed by the relevant section eg for "Accents" look in Chapter 12, section 8.

CAPITAL LETTERS indicate the item is displayed in capitals on the screen.

(m):	menu option
(IB):	Information Bar
(TP):	Track Parameter
(K):	Key
(PM):	Parameter Mode window
(EE):	Event Editor

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